Philips Car Systems

automotive
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VDO

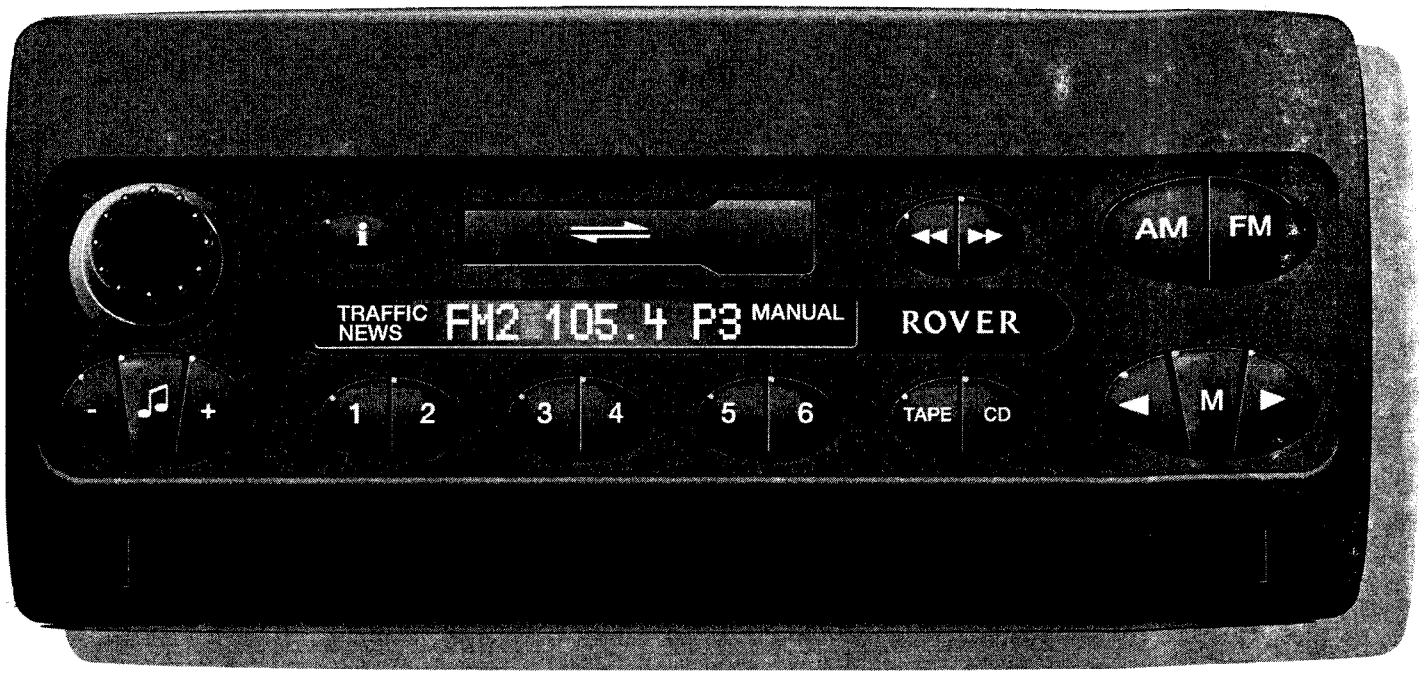
Cassette Car Radio 22DC745/60

Service Manual

4728

For repair information of the tape deck see Service Manual LCA 2.4 (4822 725 23523) and supplement LCA 5.4 (4822 725 25459)

12 V



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1. TECHNICAL DATA

Power supply

Supply voltage:	13.2 V nominal
Quiescent current:	≤ 2 mA (after 20 sec. with only perm.+ and GND connected)
Maximum current:	4.5 A (Radio mode, 4x4 W output)

Tuner

FM frequency range:	87.5 - 108 MHz
FM search grid:	500 kHz (auto search) / 100 kHz (manual search)
MW frequency range:	531 - 1602 kHz
MW search grid:	9 kHz (auto search / manual search)
LW frequency range:	153 - 279 kHz
LW search grid:	9 kHz (auto search) / 1 kHz (manual search)
Presets:	6 (FM1), 6 (FM2), 6 (FM-AST), 6 (MW1), 6 (MW2), 6 (MW-AST), 6 (LW)
Input impedance:	75 Ω (use the respective dummy aerial for measurements and alignments)

Cassette deck LCA*5-4

Number of tracks:	2 x 2
Tape speed:	4.75 cm/s
Winding time:	≤ 115 s (C60)
Wow & flutter:	≤ 0.3 %
De-emphasis:	70 / 120 µs
S/N ratio (Dolby off):	FE 48 dB weighted
	CR 53 dB weighted

Amplifier

Output:	4 x 5 W (at 10% THD)
Bass:	± 12 dB (4 x 0.5 W at 90 Hz), 2 dB steps
Treble:	± 12 dB (4 x 0.5 W at 10 kHz), 2 dB steps
Loudness:	Automatic (permanently switched on)
Telefon mute:	> -40 dB

2. CONTROLS

(***Notes***:Tape functions are only available when a tape cassette is inserted;
CD functions are only available when a CD changer is connected and the magazine contains ≥ 1 disc)

● *Push:* ON/OFF
Turn: Volume adjust

i *Short press (<2s):* Switch on/off TA functions
Long press (>2s): Switch on/off News announcement mode

◂◂ ▸▸ *Left button:* Fast rewind
Left button pressed halfway: Stop fast forward → play
Right button: Fast forward wind
Right button pressed halfway: Stop fast rewind → play
Both buttons pressed halfway: Track 1 (SIDE 1) or track 2 (SIDE 2) selection during CASSETTE mode
Both buttons pressed fully: Eject cassette (also when set is switched OFF)

AM *Short press (<2s):* AM band selection between MW1, MW2, MW-AST and LW
Long press (>2s): Store 6 strongest stations in MW-AST

FM *Short press (<2s):* FM band selection between FM1, FM2 and FM-AST
Long press (>2s): Store 6 strongest stations in FM-AST

\- Decrease BASS or TREBLE, FADER to rear, BALANCE to left

♫ *Short press (<2s):* Selects tone control (Bass, Treble, Fader, Balance, Tone menu off, Bass etc.)
Long press (>2s): Linear (Flat) mode enabled (all tone controls in the center position)

\+ Increase BASS or TREBLE, FADER to front, BALANCE to right

1 *Security code insert:* Select security code digit (1st press=first digit, 2nd press=second digit etc.)
Enable operation after entering (right) security code

1...6 *Radio mode - Short press (<2s):* Select stored station 1...6
Radio mode - Long press (>2s): Store actual station on preset 1...6
CD mode: Select disc 1...6

TAPE Select CASSETTE (TAPE) mode

CD Select CD Changer mode

◂ **M** ▸ *Security code:* ◂ : Decrease digit value (0..9..8..etc.)
▸ : Increase digit value (0..1..2..etc.)
Radio mode: ▸ : search up, ◂ : search down, **M** + ◂ : manual search down, **M** + ▸ : manual search up
CD mode: ◂ / ▸ : *Short press (<750ms)* : Select previous / next track
◂ / ▸ : *Longer press (>750ms)* : Continuous track change backward / forward
M + ◂ : Fast CD search backward; **M** + ▸ : Fast CD search forward
Radio & CD mode: **M**: *Short press* : Enter / Leave 'Manual' mode
All modes: **M**: *Long press (>8s)* : Enter 'Service' mode

3. REMOTE CONTROL

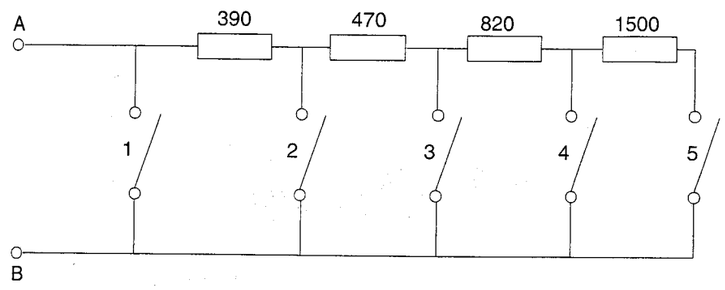
The following functions can also be controlled by the remote control:

- Volume adjust
- Preset scrolling up / down (Radio mode)
- Automatic search up / down (Radio mode)
- Manual search up / down
- Source select
- Track up / down
- Continuous track up / down
- Fast CD search backward / forward

The control functions are the same as those on the set itself. Refer to the previous section.

The remote control exists of a network of five switches and four resistors. Which function is chosen depends on the total resistance value and thus the voltage between the remote control terminals.
The table shows the respective values when the key concerned is closed.

(values in ohms; +/- 5%)



KEY NO.	KEY NAME	RESISTANCE A-B (Ω)	VOLTAGE A-B
1	VOLUME DOWN	0	0
2	VOLUME UP	390	1.25V min. 1.4V typ. 1.57V max.
3	SEARCH / TR. >	860	2.1V min. 2.3V typ. 2.54V max.
4	SEARCH / TR. <	1680	3.02V min. 3.13V typ. 3.38V max.
5	MODE / SRC	3180	3.56V min. 3.8V typ. 4.05V max.

The remote control is connected to the set via the rear connector; it is mounted to the steering wheel of the car.

4. THEFT PROTECTION

The theft protection is realized by a 'Security Code' which has to be inserted first before the set can operate.
When the set is switched on for the first time after turning the car ignition key, the display shows:
——CODE—— when the right security code still has to be inserted. This is done as follows:
Press key '1' to enable the first digit (CODE 0—-); press the '◀' or '▶' key (in the bottom right corner) as many times as necessary to reach the first digit of the right code. Key '◀' decreases the digit (0..9..8 etc.) and key '▶' increases it (0..1..2 etc.). Thereafter press key '1' to activate the second digit (CODE 10—).
Repeat the steps as described before to insert the second, third and fourth digit of the right code respectively.
After the right code has been inserted, press key '1' again to have the set operated. After inserting a wrong code for the first time, the display shows ——CODE—— again.
After inserting a wrong code for the second time, the display ——CODE—— starts blinking.
The set comes into a 'waiting loop' after three wrong attempts of code insertion. At least one hour must pass before a new code can be inserted. Switching off the set or disconnecting the power supply in the meantime results in a restart of the waiting cycle.
When switching on the set (again) while the ignition key was not interrupted, the display shows:
CODE ENABLED .

5. ESD WARNING

ATTENTION

Static Sensitive Devices
Handle Only at Static
Safe Work Stations.

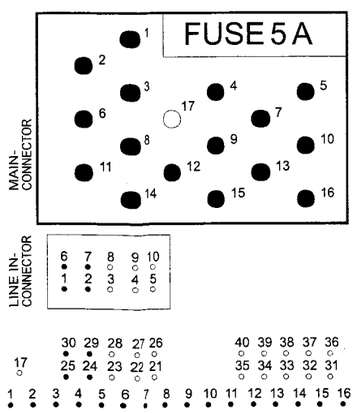
All ICs and many other semi-conductors are susceptible to electrostatic discharges (ESD).
Careless handling during repair may reduce life time of these components drastically.

When repairing, make sure that you are connected with the same potential as the mass of the set via a wrist wrap with resistance. Keep components and tools also at this potential.

Appropriate ESD equipment can be ordered under following service codes:

- Anti-static table mat large 1200 x 650 x 1.25 mm 4822 466 10953
  small 600 x 650 x 1.25 mm 4822 466 10958
- Connection box (1 MΩ) 4822 320 11307
- Complete kit ESD3 4822 310 10671
- Wristband tester 4822 344 13999

6. CONNECTOR BLOCK



1: FL+	> 1	10: REM. CONTR.	>14
2: FR+	>17	11: FR-	> 4
3: RL+	> 3	12: RL-	> 7
4: TEL.MUTE	>10	13: EXT.ILL.	>11
5: IGN.KEY	>13	14: RR-	> 6
6: RR+	> 2	15: GND	> 9
7: I-BUS	>12	16: SWITCHED+	>15
8: FL-	> 5	17: N.C.	> 8
9: PERM.+	>16		

1: NF LEFT	> 30	6: NF GND LEFT	> 25
2: NF RIGHT	> 29	7: NF GND RIGHT	> 24
3: N.C.	> 28	8: N.C.	> 23
4: N.C.	> 27	9: N.C.	> 22
5: N.C.	> 26	10: N.C.	> 21

7. SERVICE MODE

Enter: Switch set ON and press **M** button within 8 sec. for 8 sec., set will switch to tuner mode with TP OFF. When the right security code is not inserted yet (set is protected - see section THEFT PROTECTION), the serial number is the only parameter which is shown.
Leave: Switch set OFF.

With the + and - keys you can scroll the different parameters (written values are for instance):

Serial number	**SN**	**V1003799**		
Software version	**SV**	**04-97**	**75**	
Station indicators				
When reaching this mode you can control the set as usual in normal tuner mode with buttons **M**, **<** , **>** , **1**, **2**, **3**, **4**, **5**, **FM** and **AM**. The station dependent parameters will be displayed.				
With preset button **6** you can scroll different station indicators:				
Freq./fieldstrength/qual.	**103.2**	**15**	**14**	fieldstrength range 0-15 (corresponds to 0-60dBµV on FM and AM); quality range 0-15 (weighted quality for AF consideration, 15=best quality)
Freq./fieldstrength/qual. (RDS OFF)	**-03.2**	**15**	**0**	when RDS is OFF the quality is not evaluated
Program service name	**PS**	**BAYERN 3**		
Program identification (PI/TP/TA/PTY)	**D318**	**1 0**	**12**	
Qual./fieldstrength/noise/mulipath/freq.	**FF00**	**103.2**		values are shown in hexadecimal format
Freq./fieldstrength (for AM)	**AM**	**207**	**14**	depending on the waveband MW or LW i.s.o. AM
TA volume	**TP-V**	**0**		(default) with < and > or preset 1 and 2 keys TA volume can be changed (-9 to +9)
RDS	**RDS**	**ON**		RDS is switched ON by > or preset 2 key; RDS is switched OFF by < or preset 1 key
REG	**REG**	**ON**		REG is switched ON by > or preset 2 key; REG is switched OFF by < or preset 1 key
Display test <				Select patterns 1..4..3 etc. (see below)
>				Select patterns 1..2..3 etc. (see below)
Preset 1	**Chessboard pattern**			(Pattern 1)
Preset 2	**Chessboard pattern invers**			(Pattern 2)
Preset 3	**all segments shining**			(Pattern 3)
Preset 4	**all segments dark**			(Pattern 4)

8. DEFAULT SETTINGS (Delivery status)

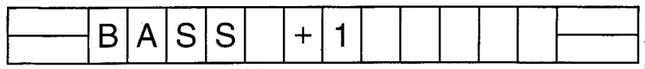
Anti-theft protection:	OFF
Volume:	100 mV (-20dBV) (FM, ΔF = 22,5 kHz, f_{mod} = 1 kHz)
Tone:	all tone settings in center position
Radio mode:	FM1, preset 1 (89.3 MHz), RDS ON, REG ON, TP OFF when switching to AM: MW, preset 1 (630 kHz); NEWS OFF, Manual OFF, User ON, TA volume: 0
Cassette mode:	NOR direction (TAPE 1)

9. DISPLAY CODES

This section gives an overview of the display menus in all modes, followed by a short explanation for each menu shown.
All values and combinations (e.g. 'Tuner'/'News' or 'Tape'/'Traffic' modes) are for instance.

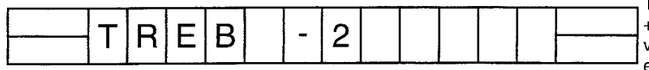
9.1 Audio / Tone menus

9.1.1 Bass



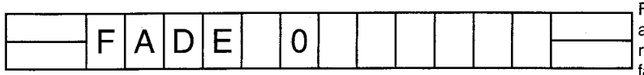
The bass value is adjustable from -6 to +6. Each step represents 2dB. If the value is 0, no sign is displayed. In the example the bass value is +2dB.

9.1.2 Treble

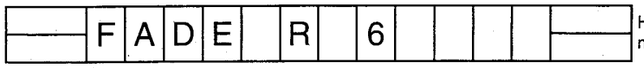


The treble value is adjustable from -6 to +6. Each step represents 2dB. If the value is 0, no sign is displayed. In the example the treble value is -4dB.

9.1.3 Fader



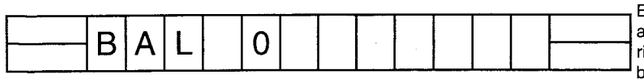
Fader value is adjustable from R0-R6 and F0-F6 (from 0dB to mute for front or rear). If value is 0, (see example), the fader is in centre position.



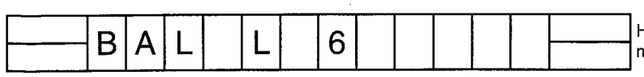
Here the front channels / speakers are muted.

Here the rear channels / speakers are muted.

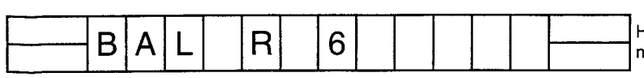
9.1.4 Balance



Balance value is adjustable from R0-R6 and L0-L6 (from 0dB to mute for left or right). If value is 0, (see example), the balance is in centre position.



Here the right channels / speakers are muted.



Here the left channels / speakers are muted.

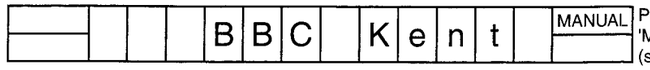
9.1.5 Linear (Flat) Mode

All audio / tone adjustments are set to their centre position.

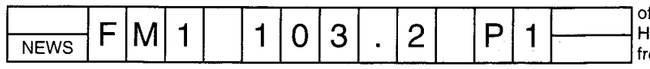
9.2 Tuner menus

9.2.1 FM

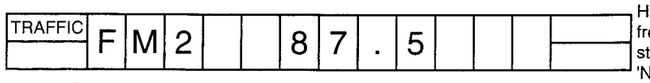
The program name is displayed.When not available, the frequency is displayed.



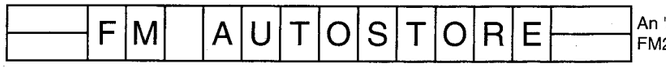
Program service name is displayed; 'MANUAL' indicates that the 'Manual' (search/select) mode is ON.



This message is displayed for a duration of 1s after a new station is recalled. Here the FM1 wave band is selected, frequency = 103.2MHz, the 'preset' number is 1 and the 'News' mode is ON.

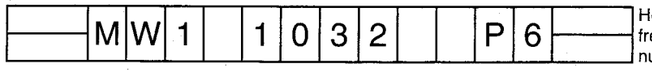


Here the FM2 wave band is selected, frequency = 87.5MHz, station is not stored under a 'preset' number and the 'News' and 'Manual' modes are ON.

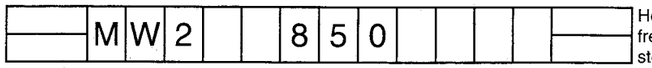


An 'Autostore' operation is performed on FM2 wave band.

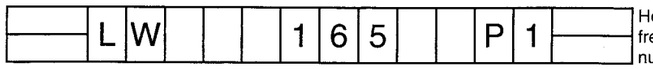
9.2.2 AM



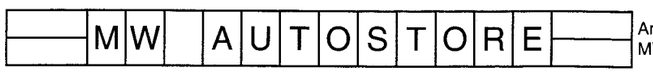
Here the MW1 wave band is selected, frequency = 1032kHz and the 'preset' number is 6.



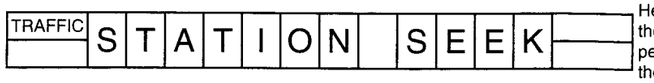
Here the MW2 wave band is selected, frequency = 850kHz and station not stored under a 'preset' number.



Here the LW wave band is selected, frequency = 165kHz and the 'preset' number is 1.



An 'Autostore' operation is performed on MW2 wave band.



Here a 'PI' search is performed because the PI code is lost; a 'Traffic' search is performed because the 'TP' indicator of the last received station is lost.

9.2.3

9.2.4

9.3

9.3.1

9.3.2

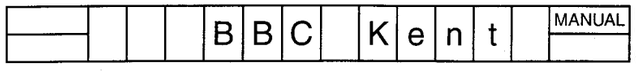
9.3.3.

ion for

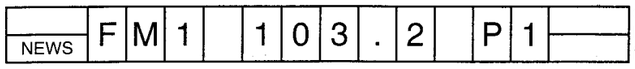
9.2 Tuner menus

9.2.1 FM

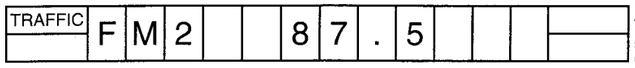
The program name is displayed.When not available, the frequency is displayed.



Program service name is displayed; 'MANUAL' indicates that the 'Manual' (search/select) mode is ON.



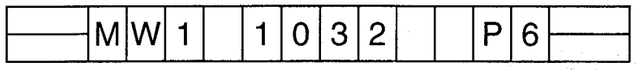
This message is displayed for a duration of 1s after a new station is recalled. Here the FM1 wave band is selected, frequency = 103.2MHz, the 'preset' number is 1 and the 'News' mode is ON.



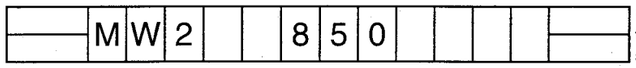
Here the FM2 wave band is selected, frequency = 87.5MHz, station is not stored under a 'preset' number and the 'News' and 'Manual' modes are ON.

An 'Autostore' operation is performed on FM2 wave band.

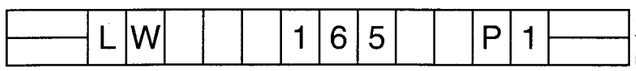
9.2.2 AM



Here the MW1 wave band is selected, frequency = 1032kHz and the 'preset' number is 6.



Here the MW2 wave band is selected, frequency = 850kHz and station not stored under a 'preset' number.



Here the LW wave band is selected, frequency = 165kHz and the 'preset' number is 1.

An 'Autostore' operation is performed on MW2 wave band.

Here a 'PI' search is performed because the PI code is lost; a 'Traffic' search is performed because the 'TP' indicator of the last received station is lost.

9.2.3 Unsuccessful Autostore Operation

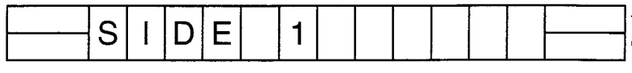
No station was found at the end of the 'Autostore' operation (FM-AST or MW-AST).

9.2.4 No Traffic Info Station

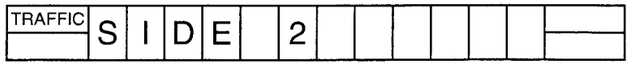
This message is displayed during a warning tone of 4s when the selected station is NOT a TP- or EON-TP station.

9.3 Tape deck menus

9.3.1 Play

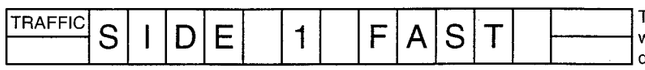


The tape is played in the forward (normal) direction.

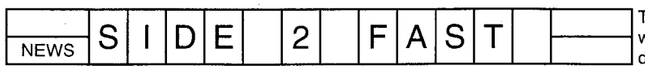


The tape is played in the backward (reverse) direction; 'TA' mode is ON.

9.3.2 Fast Wind



The tape is wound forward or backward while the deck was in the play-forward direction mode; 'TA' mode is ON.



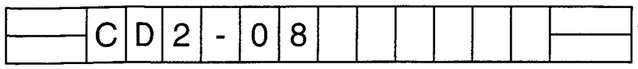
The tape is wound forward or backward while the deck was in the play-backward direction mode; 'News' mode is ON.

9.3.3. Tape Error

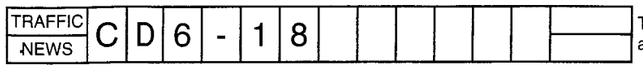
A tape error occurred, e.g. a tape jam.

9.4 CD Changer menus

9.4.1 Play

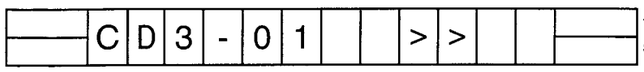


Track no.8 of disc no.2 is played.

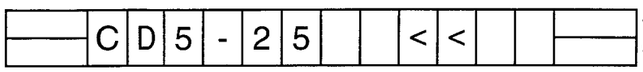


Track no.18 of disc no.6 is played; 'TA' and 'News' mode are switched ON.

9.4.2 Fast Search

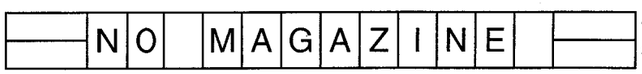


Track no.1 of disc no.3 is played; 'Fast search forward' is active.



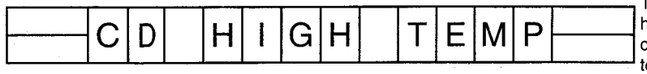
Track no.25 of disc no.5 is played; 'Fast search backward' is active.

9.4.3 No Magazine



There is no magazine in the CD changer at all.

9.4.4 Temperature Too High

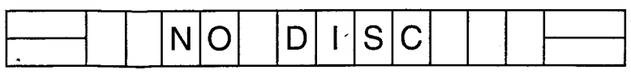


The temperature inside the CD changer has exceeded too much. Switch off the changer and / or the CD mode on the set to let decrease the temperature.

9.4.5 No Discs

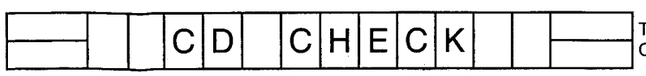
There are no discs in the magazine at all.

9.4.6 No Disc



There is no disc in the selected magazine slot.

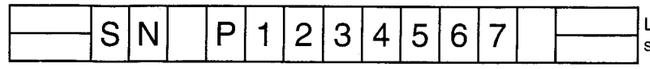
9.4.7 CD Check



The magazine is checked for available CD-s.

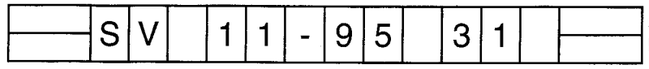
9.5 Service Mode menus

9.5.1 Serial Number



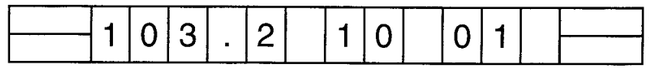
Last 8 digits of the ISO serial number are shown (in this example: P1234567)

9.5.2 Version

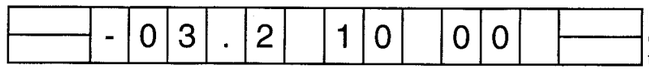


Software version 3.1, released in November 1995.

9.5.3 Field Strength / Quality

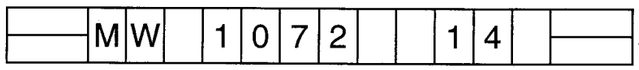


Field strength has value '10' at RDS quality value '01' at a frequency of 103.2MHz (RDS 'ON').

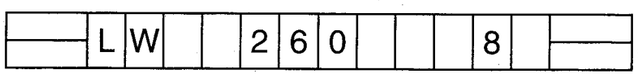


Field strength has value '10' at RDS quality value '00' (RDS 'OFF') at a frequency of 103.2MHz.

9.5.4 Field Strength / AM



Field strength has value '14' at a frequency of 1072kHz at MW wave band.

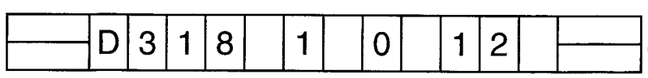


Field strength has value '8' at a frequency of 260kHz at LW wave band.

9.5.5 Program Service Name

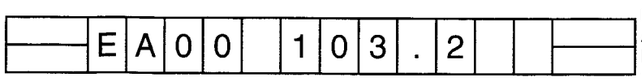
When no name is available, the 8 display positions of the name are blanked.

9.5.6 PI / TP



PI code - D318; '1' = TP 'ON' ('0'='OFF'); '0' = TA 'OFF' ('1'='ON'); PTY code = '12'.

9.5.7 General Test



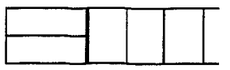
RDS quality = E(H) = 14; Field strength = A(H) = 10; Multipath = 0(H) = 00; Noise level = 0(H) = 00; Frequency = 103.2MHz.

9.5.8 Traffic Volume

9.5.9 RDS Modes

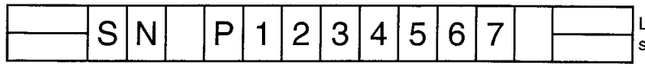
9.5.10 REG Modes

9.5.11 Display Mode



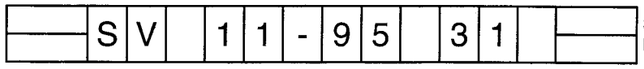
9.5 Service Mode menus

9.5.1 Serial Number



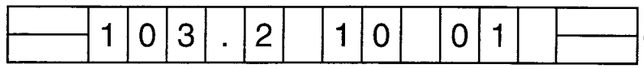
Last 8 digits of the ISO serial number are shown (in this example: P1234567)

9.5.2 Version

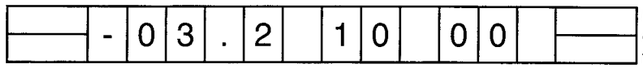


Software version 3.1, released in November 1995.

9.5.3 Field Strength / Quality

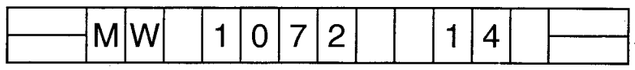


Field strength has value '10' at RDS quality value '01' at a frequency of 103.2MHz (RDS 'ON').

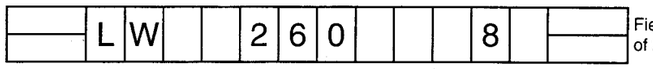


Field strength has value '10' at RDS quality value '00' (RDS 'OFF') at a frequency of 103.2MHz.

9.5.4 Field Strength / AM



Field strength has value '14' at a frequency of 1072kHz at MW wave band.

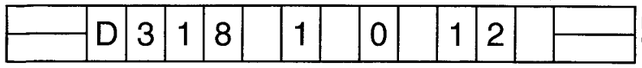


Field strength has value '8' at a frequency of 260kHz at LW wave band.

9.5.5 Program Service Name

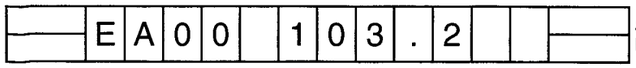
When no name is available, the 8 display positions of the name are blanked.

9.5.6 PI / TP



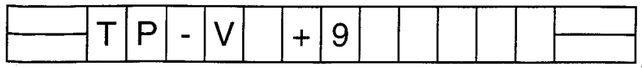
PI code - D318; '1' = TP 'ON' ('0'='OFF'); '0' = TA 'OFF' ('1'='ON'); PTY code = '12'.

9.5.7 General Test



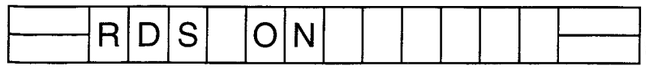
RDS quality = E(H) = 14; Field strength = A(H) = 10; Multipath = 0(H) = 00; Noise level = 0(H) = 00; Frequency = 103.2MHz.

9.5.8 Traffic Volume



Here the 'minimum traffic announcement level' is shown (example +9). Level can be adjusted from -9...+9; If '0', then no + or - sign is visible.

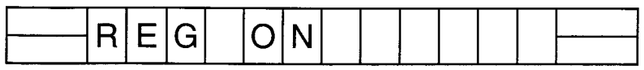
9.5.9 RDS Modes



RDS 'ON'; AF checks enabled; prog.serv.name display enabled.

RDS 'OFF'; AF checks disabled; prog.serv.name display disabled.

9.5.10 REG Modes



REG mode is 'ON'.

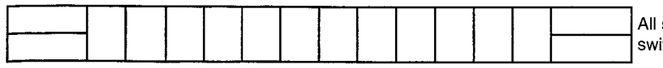
REG mode is 'OFF'.

9.5.11 Display Modes

Display shows a chess-board pattern.

Display shows an inversed chess-board pattern.

All segments of the display matrix are switched on.



All segments of the display matrix are switched off.

9.6 General

9.6.1 Alarm Message

					A	L	A	R	M										

The tuned FM station transmits an ALARM (PTY '31') code.

9.6.2 Telephone Mute

					M	U	T	E											

The 'Telephone mute' signal/line is active.

9.6.3 Security Code

		C	O	D	E		-	-	-	-									

The sets requests insertion of the security code.

		C	O	D	E		1	2	3	4									

The code has been inserted completely.

		C	O	D	E		W	A	I	T									

Set is in a 'Wait' loop after three attempts of sec.code insertion have failed.

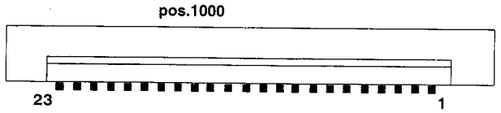
	C	O	D	E		E	N	A	B	L	E	D							

The theft protection / security code is activated.

10. FRONT UNIT CHECK

First check the voltages and signals (with set switched on) before checking the front unit. Key- and rotary switch functions must be carried out at the pins of connector pos.1000 of the front unit, after removing it from the set.
If possible, choose measuring points, connected to the pins of pos.1000 where it is easier to measure.
When one or more key / rotary switch values don't meet the value, given in the tables, replace the front unit.

Connector layout (seen from solder/chip side)



Power supply voltages and signals

Pin	Voltage / Signal
12	-VLCD = -5 ± 0.1VDC
14	SCL2 (I²C BUS)
15	SDA2 (I²C BUS)
17	PWM_LCD = +12VDC
21	PWM_SWITCH = +12VDC
22	GND
23	+5.0 ± 0.1VDC

Key matrix / key function check

Key	Key pos.	Measure between pos. 1000 pins ../..	Value in open pos.	Value in closed pos.
CD	1100	3 / 7	> 500 kΩ	< 500 Ω
◄ (DOWN)	1101	3 / 6	> 500 kΩ	< 500 Ω
M	1102	3 / 9	> 500 kΩ	< 500 Ω
► (UP)	1103	3 / 8	> 500 kΩ	< 500 Ω
4	1104	2 / 7	> 500 kΩ	< 500 Ω
5	1105	2 / 6	> 500 kΩ	< 500 Ω
6	1106	2 / 9	> 500 kΩ	< 500 Ω
TAPE	1107	2 / 8	> 500 kΩ	< 500 Ω
+	1108	5 / 7	> 500 kΩ	< 500 Ω
1	1109	5 / 6	> 500 kΩ	< 500 Ω
2	1110	5 / 9	> 500 kΩ	< 500 Ω
3	1111	5 / 8	> 500 kΩ	< 500 Ω
-	1112	4 / 7	> 500 kΩ	< 500 Ω
♫	1113	4 / 6	> 500 kΩ	< 500 Ω
i	1114	3 / 11	> 500 kΩ	< 500 Ω
AM	1115	2 / 10	> 500 kΩ	< 500 Ω
FM	1118	2 / 11	> 500 kΩ	< 500 Ω

Rotary switch function check

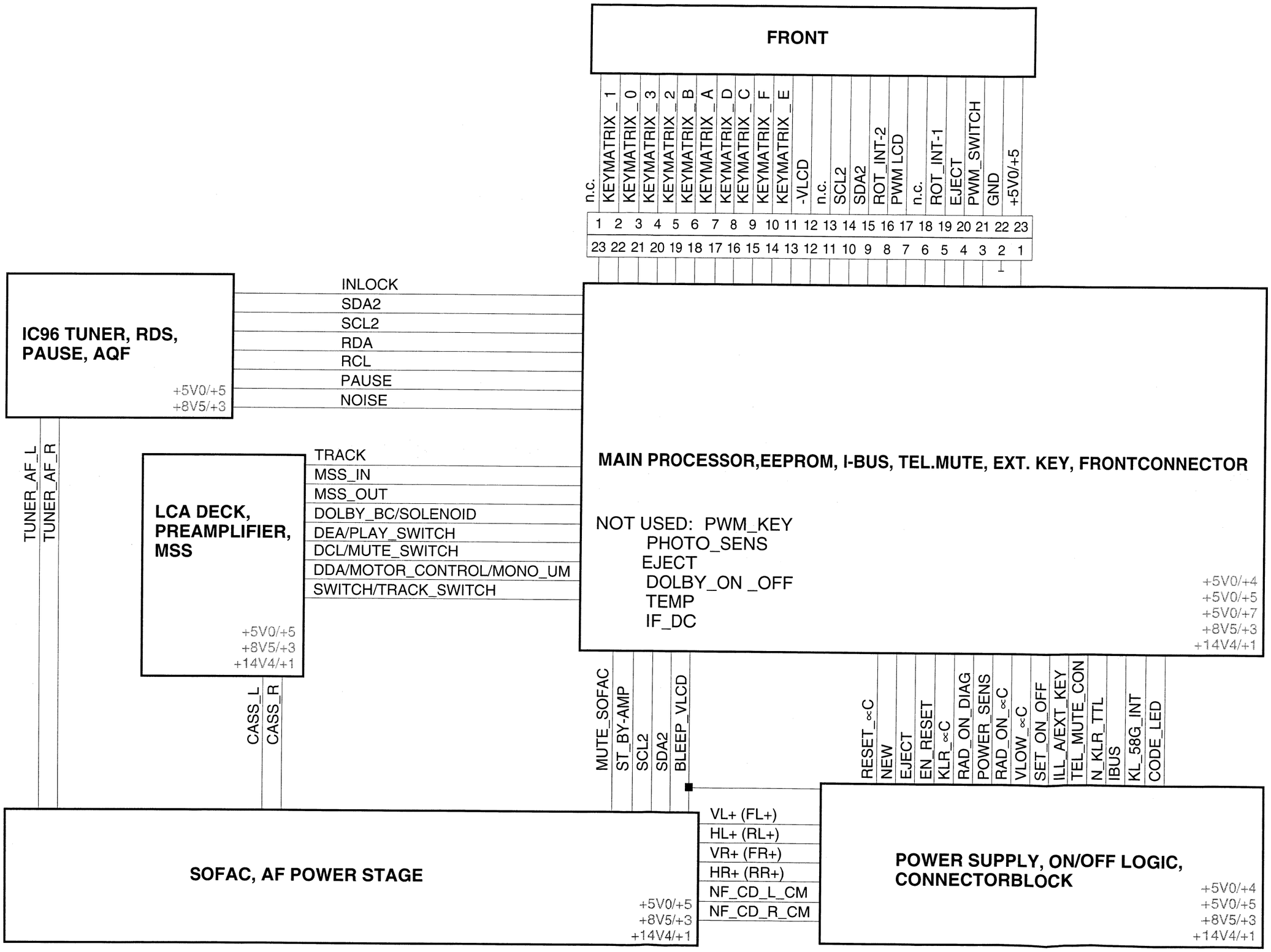
Switch	Switch pos.	Measure between pos. 1000 pins ../..	Value in open pos.	Value in closed pos.
ROT_INT1 (L)	1002-A/C	16 / 22	> 500 kΩ	< 200 Ω
ROT_INT2 (R)	1002-B/C	19 / 22	> 500 kΩ	< 200 Ω
ON_OFF	1002-4/5	3 / 10	> 500 kΩ	< 200 Ω

11. CHECKS AND ALIGNMENTS

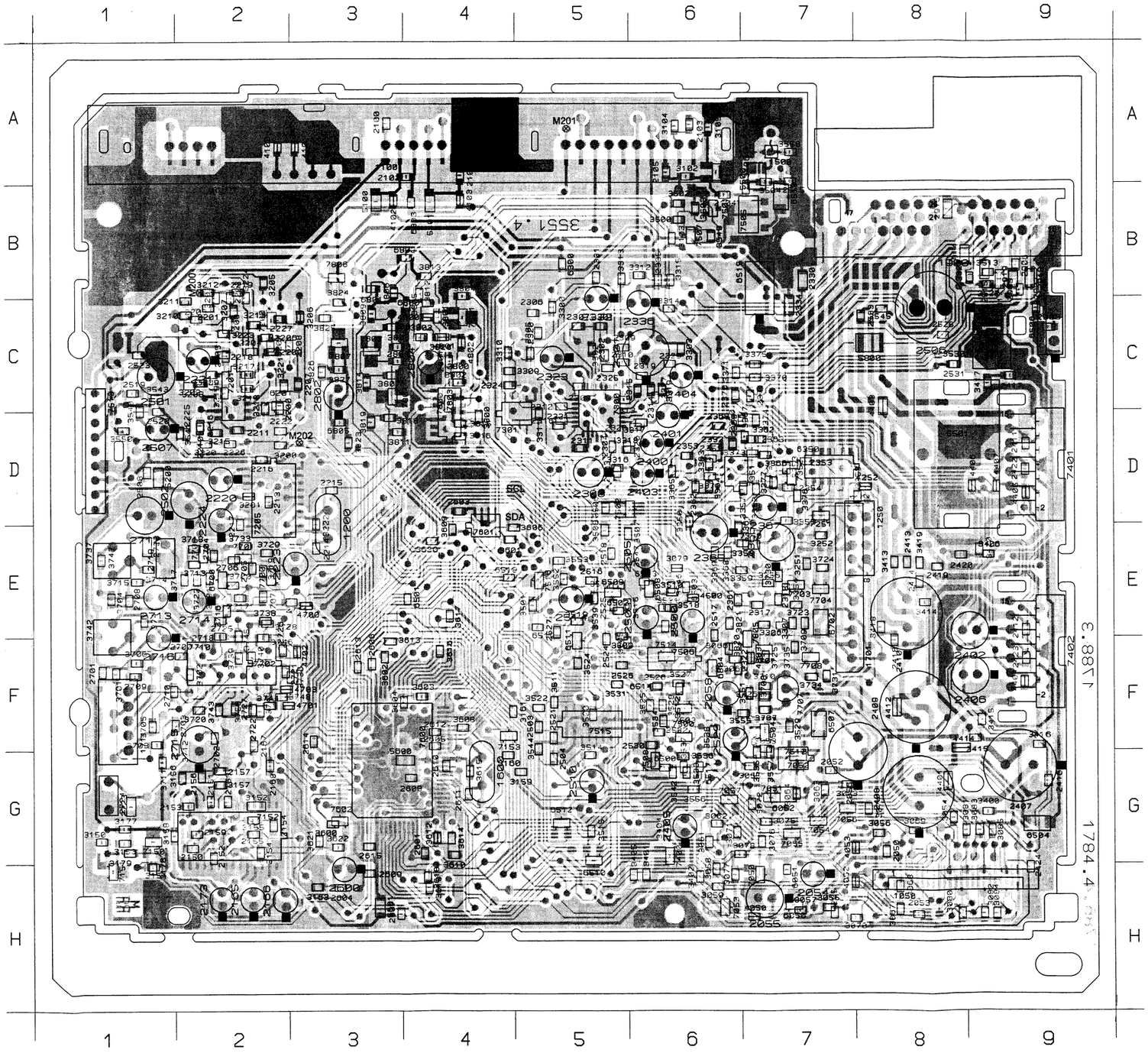
ITEM	SIGNAL	TUNE/ADJUST	POINT OF MEASURE	VALUE
1	Check demodulated FM level			
1.1	FM 98MHz, 1mV, Δf=22.5kHz, AF=1kHz	FM 98MHz	M201 (MPX)	AC 200mV +/- 50mV
1.2	FM 98MHz, 1mV, Δf=3.75kHz, AF=57kHz			AC 25mV +25mV/-10mV
2	Check noise limited sensitivity, S/N 26dB			
2.1	FM 98MHz, 4µV, Δf=22.5kHz, AF=1kHz	FM 98MHz	Connectorblock (Speaker)	Referencelevel (0 dB)
2.2	FM 98MHz, 4µV, Δf=22.5kHz, without modulation			- 26 dB
2.3	MW 999kHz, 30µV, 30% mod., AF=1kHz	MW 999kHz	Connectorblock (Speaker)	Referencelevel (0 dB)
2.4	MW 999kHz, 30µV, without modulation			- 26 dB
2.5	LW 207kHz, 55µV, 30% mod., AF=1kHz	LW 207kHz	Connectorblock (Speaker)	Referencelevel (0 dB)
2.6	LW 207kHz, 55µV, without modulation			- 26 dB
3	Check noise and pause detector			
3.1	FM 98MHz, 1mV, Δf=75kHz, AF=40kHz	FM 98MHz	M200 (NOISE)	2.5V +/- 0.3V
3.2	FM 98MHz, 1mV, Δf=5kHz, AF=1kHz	FM 98MHz	M202 (PAUSE)	0.6V +/- 0.1V
4	Check search sensitivities			
4.1	FM 98MHz, 13µV, Δf=22.5kHz, AF=1kHz	Autosearch	Tuning stop within first run	
4.2	MW 999kHz, 40µV, 30% mod., AF=1kHz	Autosearch	Tuning stop within first run	
4.3	LW 207kHz, 40µV, 30% mod., AF=1kHz	Autosearch	Tuning stop within first run	
5	Align search sensitivities *			
5.1	FM 98MHz, 22dBµV, without modulation	FM 98MHz	Store FM level into EEPROM	
5.2	MW 999kHz, 32dBµV, without modulation	MW 999kHz	Store AM level into EEPROM	

* The alignment of search sensitivities is only possible with the EEPROM TOOL KIT 4822 395 10297 and the update diskette 4822 901 10042.
Follow the instructions on screen and read the information in the files 'README.TXT' and '745_60_1.TXT'.

12. WIRING DIAGRAM



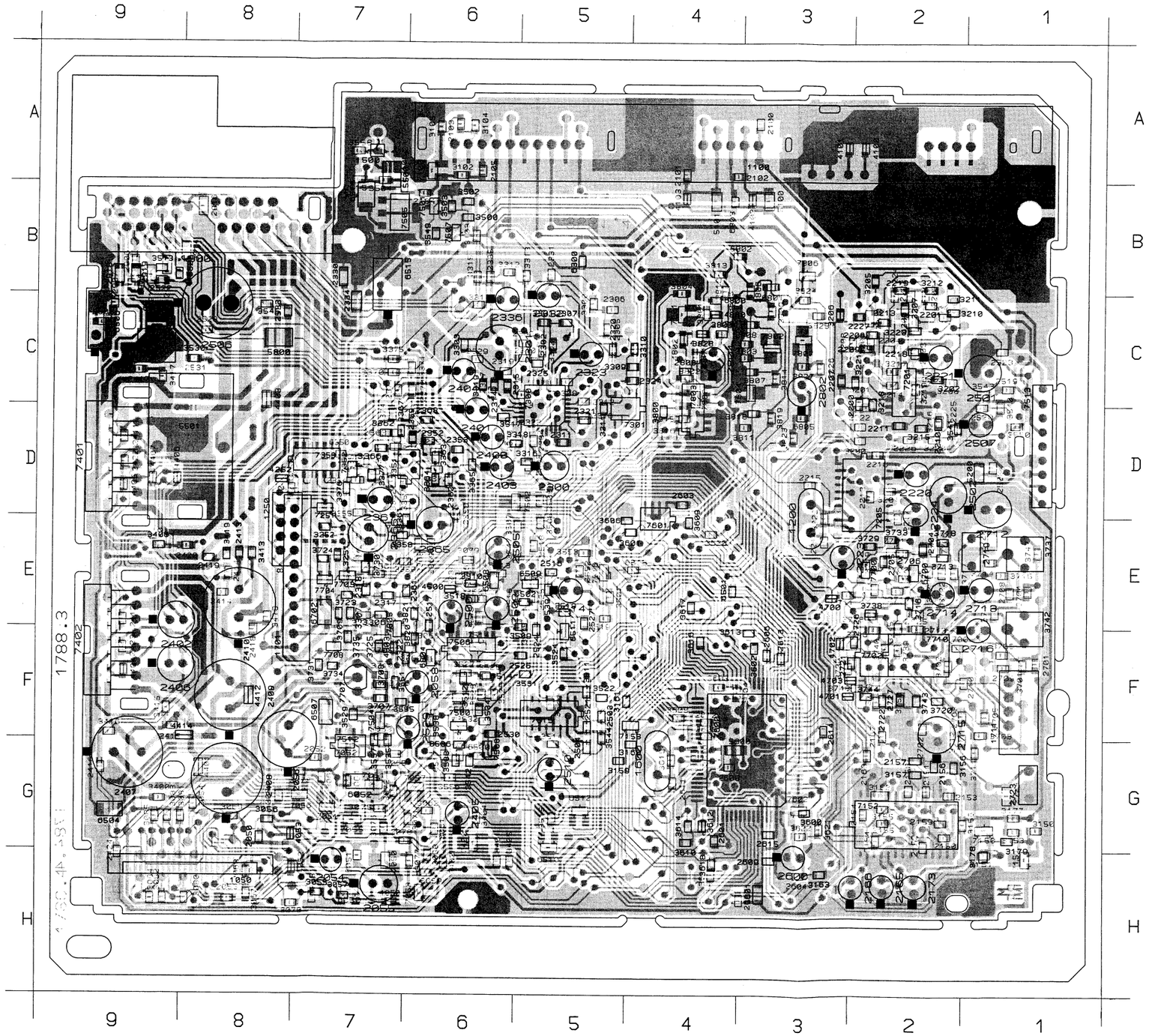
15. MAIN PCB LAYOUT, A SIDE VIEW



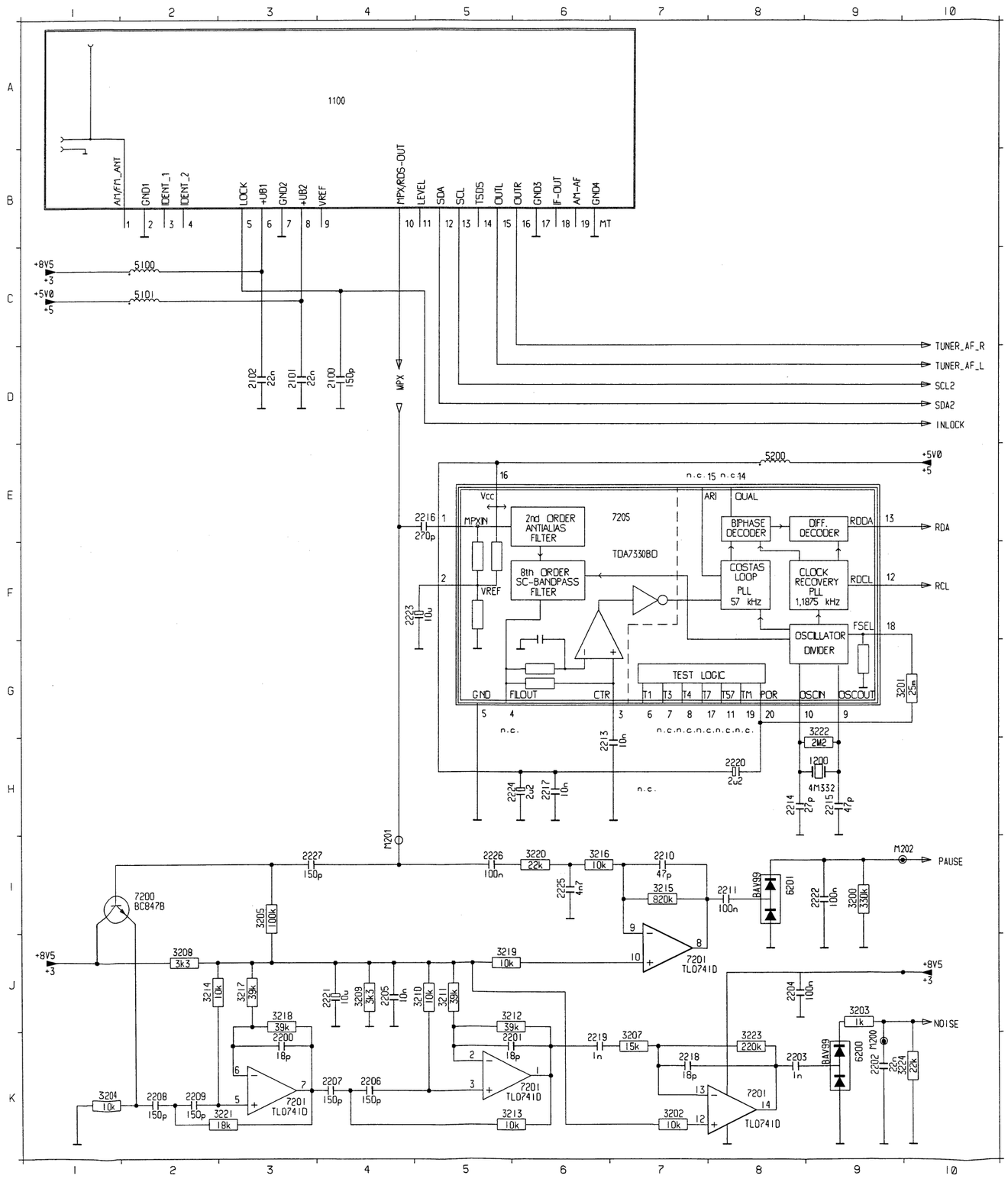
1050 H 8	2310 C 5	2510 G 5	2917 B 9	3218 C 2
1100 A 4	2311 D 5	2514 E 5	2918 B 9	3219 C 2
1200 D 3	2312 C 5	2515 A 7	2919 B 9	3220 D 2
1250 E 8	2313 C 5	2516 E 5	3053 F 7	3221 C 2
1500 A 7	2314 C 6	2517 E 6	3054 G 8	3222 D 3
1600 G 4	2315 C 6	2518 E 5	3055 H 7	3223 C 2
1701 E 7	2316 D 5	2519 C 1	3056 G 8	3224 B 2
1711 F 1	2317 E 7	2520 C 1	3057 H 7	3251 E 7
1900 B 8	2318 E 7	2521 F 5	3058 H 6	3252 E 7
2050 G 8	2319 C 6	2522 B 9	3059 H 6	3253 D 8
2051 H 7	2320 C 5	2523 C 1	3060 F 6	3300 C 5
2052 G 7	2321 D 5	2524 F 5	3061 G 6	3301 C 5
2053 H 8	2322 F 6	2525 E 5	3062 G 6	3302 C 5
2054 H 7	2323 C 5	2526 F 5	3063 G 7	3303 C 6
2055 H 7	2324 C 4	2527 E 5	3064 G 7	3306 E 7
2056 G 8	2325 C 5	2528 C 8	3065 G 7	3307 E 7
2058 F 6	2326 D 5	2529 F 6	3066 F 6	3309 C 4
2100 A 3	2327 C 6	2530 F 6	3067 H 8	3310 C 4
2101 A 4	2328 D 6	2531 C 8	3068 H 8	3311 D 5
2102 A 4	2329 C 6	2533 C 8	3069 G 8	3312 B 6
2103 A 6	2330 B 7	2600 H 3	3070 H 7	3313 B 5
2104 B 6	2331 B 5	2601 G 4	3071 G 6	3314 C 6
2105 A 6	2332 C 5	2603 D 4	3072 G 7	3315 B 6
2150 G 2	2334 C 7	2604 H 3	3073 G 7	3316 D 5
2151 G 2	2335 B 6	2605 F 4	3074 G 8	3317 D 6
2152 G 2	2336 C 6	2606 F 3	3075 G 7	3318 D 6
2153 G 2	2350 D 7	2607 H 3	3076 G 7	3319 C 6
2154 G 2	2351 D 6	2608 G 4	3077 H 6	3350 D 6
2155 G 2	2352 D 6	2609 H 3	3078 G 6	3351 D 7
2156 G 2	2353 D 6	2610 G 4	3079 E 6	3352 D 7
2157 G 2	2354 D 7	2611 G 4	3080 H 8	3353 D 7
2158 G 2	2361 E 6	2612 F 4	3081 G 8	3354 E 7
2159 G 2	2362 D 6	2613 F 3	3082 H 9	3355 D 7
2165 H 2	2363 D 7	2614 F 3	3083 G 9	3356 E 7
2166 H 2	2365 E 6	2615 G 3	3084 H 9	3357 D 7
2167 F 2	2366 E 7	2700 F 2	3085 G 9	3358 E 7
2168 G 2	2367 D 7	2701 F 1	3102 A 6	3359 E 6
2173 H 2	2368 D 6	2702 F 2	3103 B 6	3361 E 6
2200 C 2	2369 D 6	2703 F 1	3104 A 6	3362 D 7
2201 C 2	2370 C 6	2704 E 2	3105 A 6	3363 D 6
2202 B 2	2371 C 7	2705 E 2	3106 B 7	3364 D 6
2203 C 2	2400 D 6	2706 E 2	3150 G 1	3365 D 6
2204 C 2	2401 D 6	2707 E 2	3151 H 1	3366 D 7
2205 C 2	2402 E 9	2708 E 1	3152 G 2	3367 D 7
2206 C 2	2403 D 6	2709 F 1	3153 G 1	3368 E 6
2207 C 3	2404 C 6	2710 F 1	3154 G 2	3369 E 6
2208 C 2	2405 G 6	2711 E 3	3155 G 2	3370 C 7
2209 C 2	2406 F 9	2712 D 1	3156 G 2	3371 C 6
2210 D 2	2407 G 9	2713 E 1	3157 G 2	3372 D 6
2211 D 2	2408 G 8	2714 E 2	3158 G 1	3373 D 7
2213 D 2	2409 F 8	2715 F 2	3159 G 5	3374 D 7
2214 E 3	2410 E 8	2716 E 1	3160 G 4	3375 C 7
2215 D 3	2411 D 9	2717 E 2	3161 F 4	3376 D 7
2216 D 2	2412 E 9	2718 E 2	3163 H 3	3377 D 7
2217 D 2	2413 E 8	2719 E 1	3177 G 1	3400 G 9
2218 C 2	2414 E 8	2720 E 1	3178 H 1	3401 H 6
2219 B 2	2415 F 9	2721 F 2	3179 G 1	3402 H 6
2220 D 2	2416 G 9	2722 F 2	3200 D 2	3404 G 6
2221 C 2	2417 C 9	2723 G 1	3201 D 2	3405 H 6
2222 D 2	2418 F 8	2724 G 1	3202 C 2	3406 E 9
2223 E 3	2419 E 8	2725 E 2	3203 B 2	3413 E 8
2224 D 2	2420 E 8	2726 F 2	3204 C 2	3414 E 8
2225 D 2	2422 D 9	2727 F 2	3205 B 2	3415 F 9
2226 D 2	2423 F 9	2800 C 4	3206 C 3	3416 F 9
2227 C 2	2424 H 9	2801 C 4	3207 C 2	3417 C 9
2300 D 5	2500 E 6	2802 C 3	3208 C 2	3418 E 8
2301 C 6	2501 C 1	2803 C 3	3209 C 2	3419 E 8
2302 C 5	2502 D 2	2804 C 4	3210 C 2	3420 E 9
2303 D 5	2503 F 5	2905 B 9	3211 C 2	3500 B 6
2304 D 5	2504 G 5	2906 B 9	3212 B 2	3501 E 5
2305 C 5	2505 E 6	2907 C 9	3213 C 2	3502 B 6
2306 C 5	2506 C 8	2908 C 9	3214 C 2	3503 B 6
2307 C 5	2507 D 1	2914 B 8	3215 D 2	3504 A 7
2308 C 5	2508 D 1	2915 B 9	3216 D 2	3505 F 5
2309 C 5	2509 E 6	2916 B 8	3217 C 2	3506 D 5

15. MAIN PCB LAYOUT, B SIDE VIEW

3507 E 5	3703 F 1	3826 C 3	7052 G 7
3508 E 5	3704 E 1	3827 C 3	7053 H 6
3509 E 5	3705 F 1	3828 C 4	7054 G 7
3510 E 6	3706 F 1	4050 H 7	7055 G 7
3511 F 5	3707 F 7	4052 H 7	7056 G 7
3512 F 6	3708 F 7	4053 G 7	7057 G 6
3513 B 9	3709 E 7	4100 A 2	7100 A 6
3514 G 5	3710 F 7	4101 A 3	7150 G 1
3515 G 5	3711 G 1	4102 B 3	7151 H 1
3516 E 5	3712 F 1	4103 B 4	7152 G 2
3517 E 5	3713 E 2	4252 D 8	7153 F 4
3518 E 6	3714 E 1	4401 G 8	7200 C 2
3519 E 5	3715 E 1	4403 C 8	7201 C 2
3520 F 5	3716 E 2	4404 F 9	7205 D 2
3521 E 6	3717 E 2	4405 D 9	7251 D 7
3522 F 5	3718 E 2	4406 D 9	7300 C 5
3524 F 5	3719 E 2	4407 D 9	7301 D 5
3525 F 6	3720 F 2	4412 F 8	7350 E 7
3526 F 6	3721 E 2	4414 F 8	7351 D 6
3527 F 6	3722 E 2	4500 E 6	7352 D 7
3528 F 6	3723 E 7	4700 E 3	7353 D 7
3529 F 7	3724 E 7	4701 F 2	7400 G 6
3530 C 8	3725 F 7	4702 F 3	7401 D 9
3531 F 5	3726 F 7	4703 F 2	7402 F 9
3532 F 6	3727 F 7	4800 C 4	7500 F 6
3533 G 6	3728 E 2	4801 C 4	7501 B 6
3534 F 6	3729 E 2	4802 C 4	7502 D 6
3535 G 7	3730 E 7	4803 F 7	7503 F 6
3536 G 6	3731 F 7	5100 B 3	7504 F 7
3537 G 6	3732 E 7	5101 B 4	7505 B 7
3538 F 6	3733 E 2	5200 D 1	7506 F 6
3539 E 5	3734 F 7	5500 A 7	7507 B 6
3540 C 1	3735 F 7	5501 D 8	7508 G 6
3541 D 2	3736 F 3	5600 G 4	7512 G 7
3542 G 6	3737 E 1	5601 H 3	7513 D 1
3543 C 1	3738 E 2	5800 C 8	7514 F 6
3544 F 5	3739 F 2	6050 H 7	7515 F 5
3545 C 8	3740 F 2	6051 H 7	7516 E 5
3546 E 6	3741 E 1	6052 G 7	7600 G 3
3547 E 5	3742 E 1	6200 C 2	7601 E 4
3548 E 6	3743 F 2	6201 C 2	7602 G 3
3549 B 6	3744 F 2	6300 B 5	7700 E 2
3550 D 1	3745 E 2	6350 D 7	7701 E 2
3551 F 7	3746 E 2	6500 G 6	7702 F 2
3552 E 5	3747 E 1	6501 E 4	7703 E 7
3553 E 5	3748 F 2	6502 E 5	7704 E 7
3555 F 7	3749 F 2	6503 E 6	7705 F 7
3556 G 6	3750 F 2	6504 G 9	7706 E 2
3557 G 7	3800 D 4	6505 C 9	7707 F 7
3558 A 7	3801 C 4	6506 C 9	7708 F 7
3600 G 3	3802 C 4	6507 F 7	7710 F 2
3601 E 4	3803 C 4	6508 E 6	7800 C 4
3602 F 3	3804 B 4	6509 E 5	7801 C 4
3603 F 4	3805 C 4	6510 G 5	7802 C 3
3604 F 4	3806 B 3	6511 F 5	7803 D 4
3606 E 4	3807 C 3	6512 G 5	7804 C 3
3608 F 4	3808 C 3	6513 E 6	7805 F 7
3609 E 4	3809 C 3	6514 F 6	7806 B 3
3610 G 4	3810 C 3	6515 B 7	7807 C 3
3612 G 4	3811 D 3	6516 B 7	J300 C 5
3613 F 3	3812 B 4	6517 G 6	M200 B 2
3614 G 4	3813 B 4	6518 E 4	M201 A 5
3615 G 4	3814 C 3	6519 E 5	M202 C 3
3616 F 4	3815 D 4	6700 E 2	S500 A 6
3617 E 4	3816 D 4	6702 E 7	S501 A 7
3618 H 4	3818 D 3	6800 C 4	S800 B 9
3619 H 4	3819 D 3	6801 B 3	S801 D 6
3620 E 4	3820 F 6	6802 B 4	
3621 G 3	3821 E 6	6803 B 4	
3622 G 3	3822 B 9	6804 F 6	
3700 E 2	3823 D 3	6805 D 3	
3701 F 1	3824 C 3	7050 H 7	
3702 F 2	3825 C 3	7051 G 7	



16. CIRCUIT: IC 96 TUNER, RDS, PAUSE, AQF



1100	A	4
1200	H	9
2100	D	4
2101	D	3
2102	D	3
2200	K	3
2201	K	6
2202	K	9
2203	K	8
2204	J	8
2205	J	4
2206	K	4
2207	K	4
2208	K	2
2209	K	2
2210	I	7
2211	I	8
2213	H	6
2214	H	8
2215	H	9
2216	E	5
2217	H	6
2218	K	7
2219	K	6
2220	H	8
2221	J	4
2222	I	9
2223	F	4
2224	H	6
2225	I	6
2226	I	5
2227	I	3
3200	I	9
3201	G	10
3202	K	7
3203	J	9
3204	K	1
3205	I	3
3207	K	7
3208	J	2
3209	J	4
3210	J	5
3211	J	5
3212	J	6
3213	K	6
3214	J	2
3215	I	7
3216	I	6
3217	J	3
3218	J	3
3219	J	5
3220	I	6
3221	K	3
3222	G	9
3223	K	8
3224	K	10
5100	C	2
5101	C	2
5200	E	8
6200	K	9
6201	I	8
7200	I	2
7201	K	6
7201	K	3
7201	J	7
7201	K	8
7205	E	7
M200	K	9
M201	I	4
M202	I	9

Pos. 7200, BC847B
B: 4.0 V
C: 8.4 V
E: 3.5 V

Pos. 7201, TL0741D
1, 2, 3: 4.2 V
4: 8.4 V
5, 6, 7, 8, 9, 10: 4.2 V
11: GND
12, 13, 14: 4.2 V

Pos. 7205, TDA7330BD
1, 2: 2.2 V
3: 1.5 V
4: n.c.
5: GND
6, 7, 8: n.c.
9: 2.5 V
10: 2.3 V
11: n.c.
12: 2.5 V (CLOCK)
13: 2.5 V (DATA)
14, 15: n.c.
16: 5.0 V
17: n.c.
18: 0 V
19: n.c.
20: 0 V

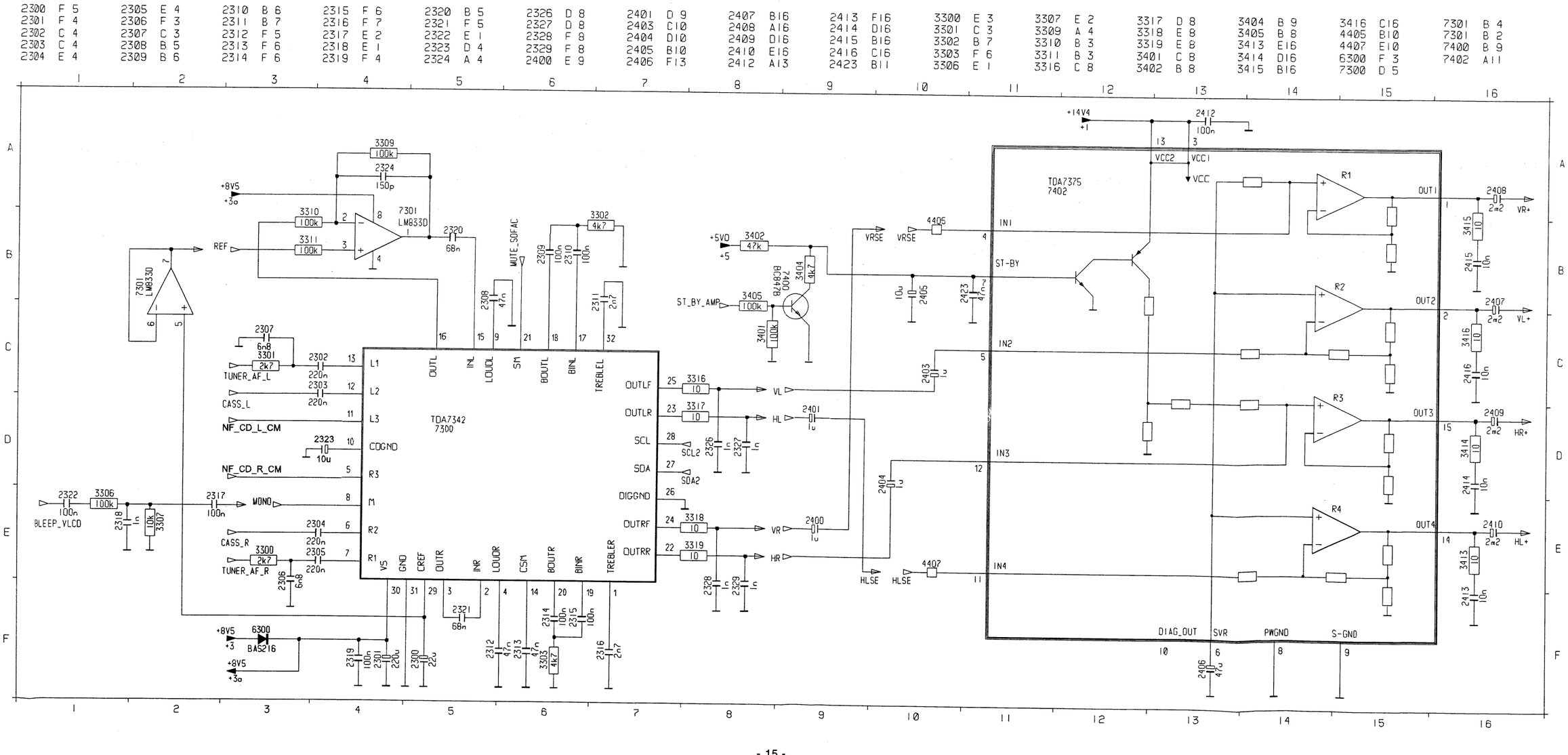
17. CIRCUIT: SOFAC, AF POWER STAGE

Pos. 7300, TDA7342
1 - 13: 3.9 V
14: 6.9 V
15 - 20: 3.9 V
21: 4.5 V
22 - 25: 3.2 V
26: GND
27: 4.9 V (DATA)
28: 4.9 V (CLOCK)
29: 3.9 V
30: 7.7 V
31: GND
32: 3.9 V

Pos. 7301, LM8330
1 - 3: 3.9 V
4: GND
5 - 7: 3.9 V
8: 7.6 V

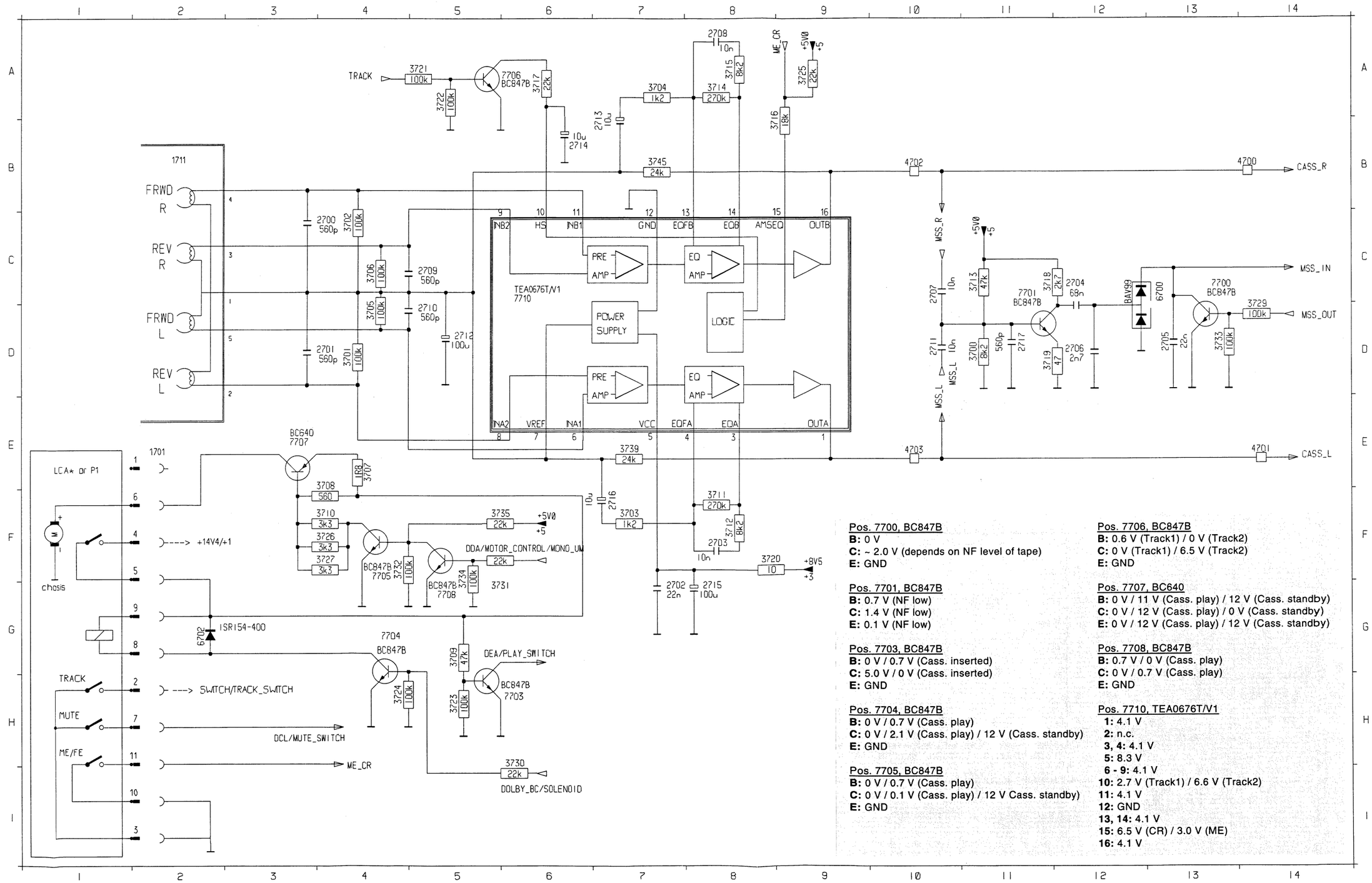
Pos. 7400, BC847B
B: 0 V
C: 4.4 V
E: GND

Pos. 7402, TDA7375
1, 2: 6.8 V
3: 12 V
4, 5, 6: 0.7 V
7: 4.4 V
8, 9: GND
10: n.c.
11, 12: 0.7 V
13: 12 V
14, 15: 6.8 V



18. CIRCUIT: LCA DECK, PREAMPLIFIER, MSS

1701	E 2	2704	C12	2710	D 5	2716	F 7	3704	A 7	3710	F 4	3716	B 9	3722	A 5	3729	D14	3735	F 6	4703	E10	7704	G 4
1711	B 2	2705	D13	2711	D10	2717	D11	3705	D 4	3711	F 8	3717	A 6	3723	H 5	3730	H 6	3739	E 7	6700	C13	7705	F 4
2700	C 4	2706	D12	2712	D 5	3700	D11	3706	C 4	3712	F 8	3718	C11	3724	H 4	3731	G 6	3745	B 7	6702	G 2	7706	A 6
2701	D 4	2707	C10	2713	B 7	3701	D 4	3707	E 4	3713	C11	3719	D11	3725	A 9	3732	F 4	4700	B14	7700	C13	7707	E 3
2702	G 7	2708	A 8	2714	B 6	3702	C 4	3708	E 4	3714	A 8	3720	F 8	3726	F 4	3733	D13	4701	E14	7701	C11	7708	G 5
2703	F 8	2709	C 5	2715	G 8	3703	F 7	3709	G 5	3715	A 8	3721	A 5	3727	F 4	3734	F 5	4702	B10	7703	H 6	7710	C 6



Pos. 7700, BC847B
B: 0 V
C: ~ 2.0 V (depends on NF level of tape)
E: GND

Pos. 7701, BC847B
B: 0.7 V (NF low)
C: 1.4 V (NF low)
E: 0.1 V (NF low)

Pos. 7703, BC847B
B: 0 V / 0.7 V (Cass. inserted)
C: 5.0 V / 0 V (Cass. inserted)
E: GND

Pos. 7704, BC847B
B: 0 V / 0.7 V (Cass. play)
C: 0 V / 2.1 V (Cass. play) / 12 V (Cass. standby)
E: GND

Pos. 7705, BC847B
B: 0 V / 0.7 V (Cass. play)
C: 0 V / 0.1 V (Cass. play) / 12 V Cass. standby)
E: GND

Pos. 7706, BC847B
B: 0.6 V (Track1) / 0 V (Track2)
C: 0 V (Track1) / 6.5 V (Track2)
E: GND

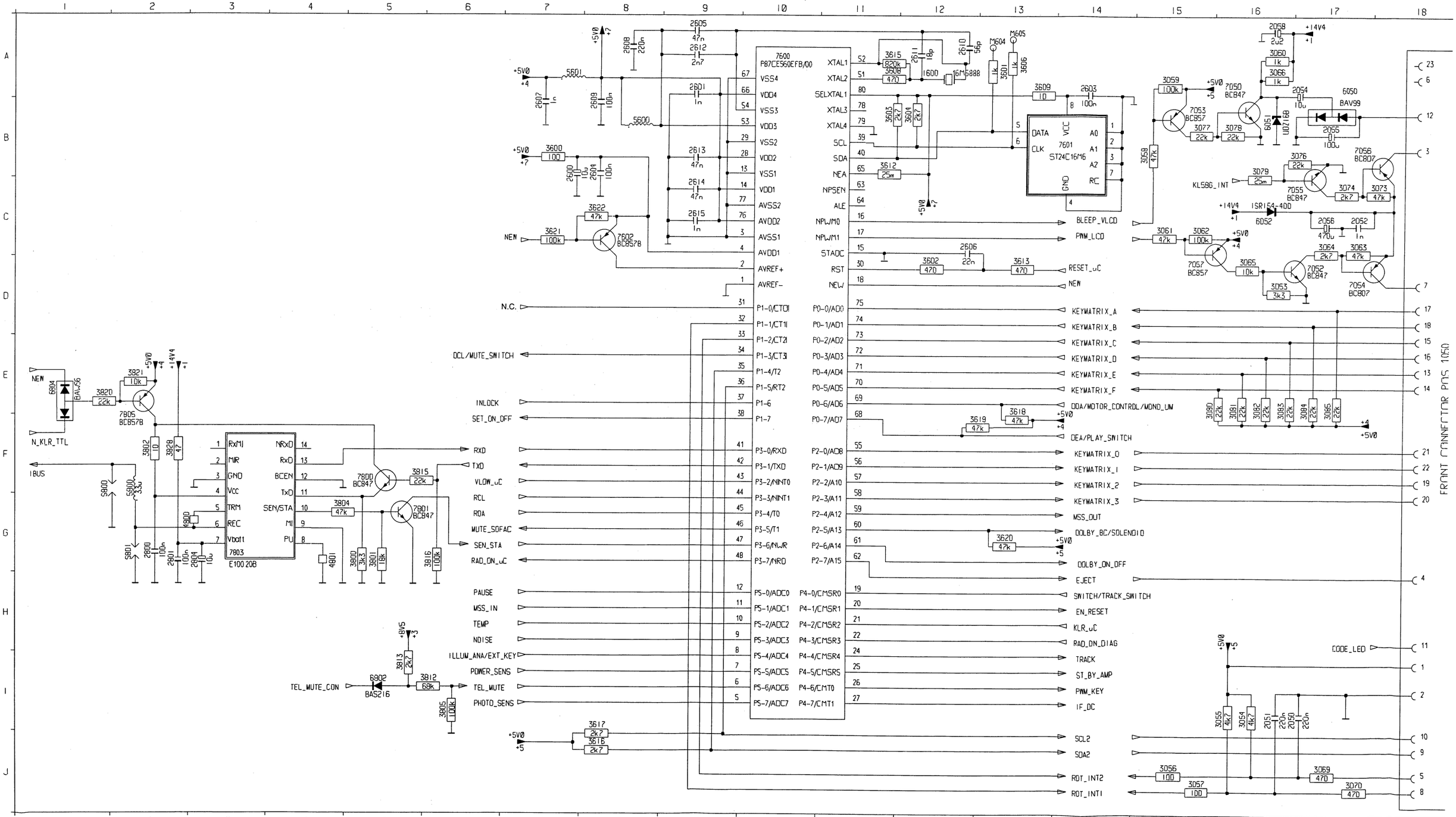
Pos. 7707, BC640
B: 0 V / 11 V (Cass. play) / 12 V (Cass. standby)
C: 0 V / 12 V (Cass. play) / 0 V (Cass. standby)
E: 0 V / 12 V (Cass. play) / 12 V (Cass. standby)

Pos. 7708, BC847B
B: 0.7 V / 0 V (Cass. play)
C: 0 V / 0.7 V (Cass. play)
E: GND

Pos. 7710, TEA0676T/V1
1: 4.1 V
2: n.c.
3, 4: 4.1 V
5: 8.3 V
6 - 9: 4.1 V
10: 2.7 V (Track1) / 6.6 V (Track2)
11: 4.1 V
12: GND
13, 14: 4.1 V
15: 6.5 V (CR) / 3.0 V (ME)
16: 4.1 V

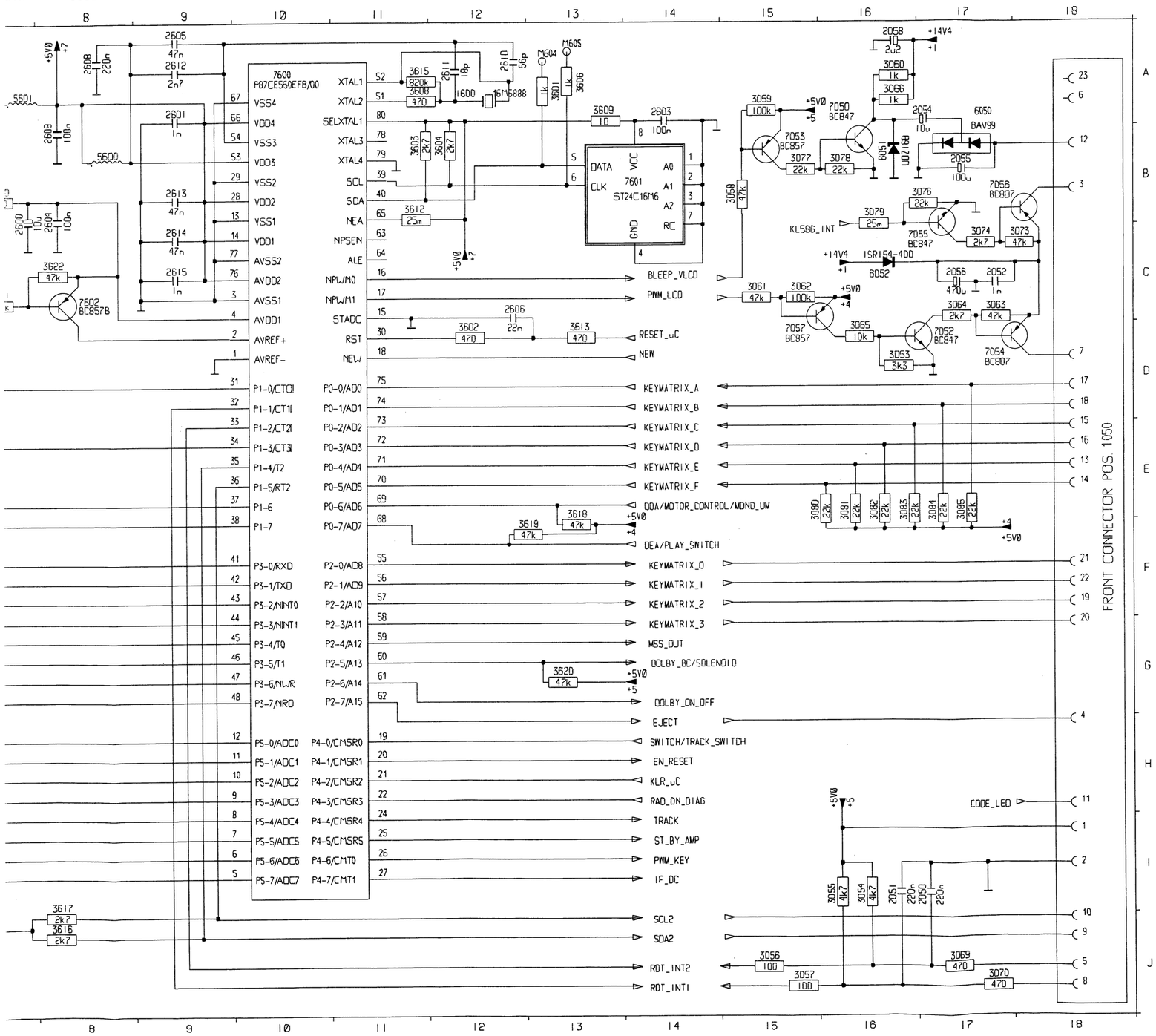
19. CIRCUIT: MAIN PROCESSOR, EEPROM, I-BUS, TEL.MUTE, EXT.KEY, FRONT CONNECTOR

1050	E18	2056	C17	2606	C12	2613	B 9	3054	I16	3061	C15	3070	J17	3080	E15	3601	A13	3612	B11	3620	G13	3805	I 6	3828	F 2	6051	B16	7054	D17	7800	F 5	S801	G 2
1600	A12	2058	A16	2607	B 7	2614	C 9	3055	I16	3062	C15	3073	C18	3081	E16	3602	D12	3613	D13	3621	C 7	3812	I 6	4800	G 3	6052	C16	7055	C16	7801	G 5		
2050	I17	2600	B 7	2608	A 8	2615	C 9	3056	J15	3063	C17	3074	C17	3082	E16	3603	B11	3615	A11	3622	C 8	3813	I 5	4801	G 4	6802	I 5	7056	B17	7803	G 3		
2051	I16	2601	A 9	2609	B 8	2800	G 2	3057	J15	3064	C17	3076	B17	3083	E16	3604	B12	3616	J 8	3800	G 5	3815	F 5	5600	B 8	6804	E 1	7057	D15	7805	F 2		
2052	C17	2603	A14	2610	A12	2801	G 2	3058	B15	3065	D16	3077	B15	3084	E17	3606	A13	3617	I 8	3801	G 5	3816	G 6	5601	A 7	7050	A16	7600	A10	M604	A13		
2054	A17	2604	B 8	2611	A12	2804	G 3	3059	A15	3066	A16	3078	B16	3085	E17	3608	A11	3618	E13	3802	F 2	3820	E 1	5800	F 2	7052	D17	7601	B14	M605	A13		
2055	B17	2605	A 9	2612	A 9	3053	D16	3060	A16	3069	J17	3079	B16	3600	B 7	3609	A13	3619	F13	3804	G 4	3821	E 2	6050	A17	7053	B15	7602	C 8	S800	F 1		



NNECTOR

I17	3080	E15	3601	A13	3612	B11	3620	G13	3805	I 6	3828	F 2	6051	B16	7054	D17	7800	F 5	S801	G 2
I18	3081	E16	3602	D12	3613	D13	3621	C 7	3812	I 6	4800	G 3	6052	C16	7055	C16	7801	G 5		
C17	3082	E16	3603	B11	3615	A11	3622	C 8	3813	I 5	4801	G 4	6802	I 5	7056	B17	7803	G 3		
B17	3083	E16	3604	B12	3616	J 8	3800	G 5	3815	F 5	5600	B 8	6804	E 1	7057	D15	7805	F 2		
B15	3084	E17	3606	A13	3617	I 8	3801	G 5	3816	G 6	5601	A 7	7050	A16	7600	A10	M604	A13		
B16	3085	E17	3608	A11	3618	E13	3802	F 2	3820	E 1	5800	F 2	7052	D17	7601	B14	M605	A13		
B16	3600	B 7	3609	A13	3619	F13	3804	G 4	3821	E 2	6050	A17	7053	B15	7602	C 8	S800	F 1		



Pos. 7050, BC847
B: 0.4 V
C: 4.8 V
E: GND

Pos. 7052, BC847
B: 0.2 V
C: 9.5 V
E: GND

Pos. 7053, BC857
B: 4.6 V
C: 2.5 V
E: 4.9 V

Pos. 7054, BC807
B: 12 V
C: 5.8 V
E: 12 V

Pos. 7055, BC847
B: 0.6 V (EXT._ILL OFF)
C: 12 V (EXT._ILL OFF)
E: GND

Pos. 7056, BC807
B: 0.7 V (EXT._ILL OFF)
C: 0.7 V (EXT._ILL OFF)
E: 12 V

Pos. 7057, BC857
B: 4.7 V
C: 1.2 V
E: 4.9 V

Pos. 7600, P87CE560
1: GND
2: 4.9 V
3: GND
4: 5.0 V
5: 1.0 V
6: 5.0 V / 0.4 V (PHONE)
7: 1.5 V (low voltage OFF) / 3.0 V (high voltage OFF)
8: varying dependent on remote control function
9: 0...3 V (NOISE dependent)
10: 3.7 V (Temperature dependent)
11: ~ 1.0 V (Radio) / ~ 2.0 V (Tape): NF level dep.
12: ~ 5.0 V / LOW (NF low)
13: GND
14: 5.0 V
15: GND
16: 2.5 V
17: 3.8 V
18: 0 V / 5.0 V (IGN. OFF)
19: 5.0 V (Radio) / 0 V (Tape)
20: 5.0 V sensitive measuring point !
21, 22: 4.9 V
23: n.c.
24: 4.6 V (Track1) / 0 V (Track2)
25: 0 V / 4.6 V (Set OFF)
26: 4.9 V
27: 0 V
28: 5.0 V
29: GND
30: 0 V (NORM.)
31: n.c.
32, 33: 4.9 V / 0.5 V alternates when turning volume knob
34: 4.9 V / 3.7 V (Tape wind) / 0 V (MUTE)
35: 5,0 V (SDA)
36: 5,0 V (SCL)
37: 4.9 V / LOW (search)
38: 0 V / 5.0 V (IGN. OFF)
39: 5,0 V (SCL)
40: 5,0 V (SDA)
41: 0 V
42: 4.5 V
43: 5.0 V / 0 V (low or high voltage OFF)
44: 2.5 V (CLOCK)
45: 2.5 V (DATA)
46: 4.5 V
47: 0 V
48: 0 V / 4.8 V (Set OFF)
49, 50: n.c.
51: 2.6 V sensitive measuring point !
52: 2.2 V
53: 4.9 V
54: 0 V
55 - 58: 4.9 V
59: 0 V
60: 3.8 V (Dolby OFF or B) / 0 V (Dolby C)
61: 4.6 V (Dolby OFF) / 0 V (Dolby B or C)
62: 4.9 V
63, 64: n.c.
65: 4.9 V
66: 5.0 V
67: GND
68: 0 V
69 - 75: 4.9 V
76: 5.0 V
77: GND
78: n.c.
79: GND
80: 5.0 V

Pos. 7601, ST24C16
1-4: GND
5: 5.0 V (SDA)
6: 5.0 V (SCL)
7: GND
8: 5.0 V

Pos. 7602, BC857B
B: 0 V / 4.3 V (IGN. OFF)
C: 4.9 V / 0 V (IGN. OFF)
E: 5.0 V

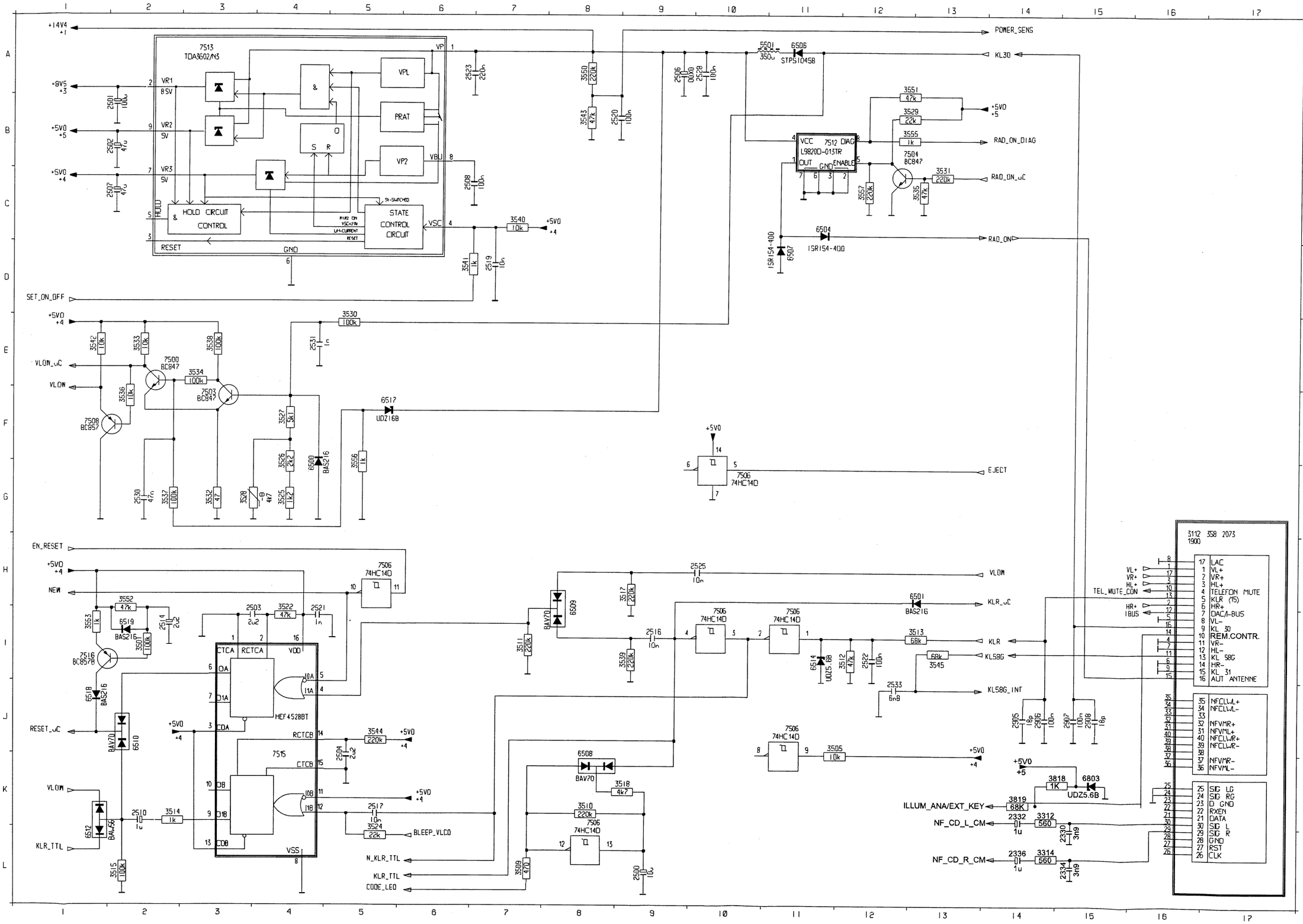
Pos. 7800, BC847
B: 4.4 V
C: 4.9 V / 0 V (IGN. OFF)
E: 3.9 V

Pos. 7801, BC847
B: 0.7 V
C: 0 V
E: GND

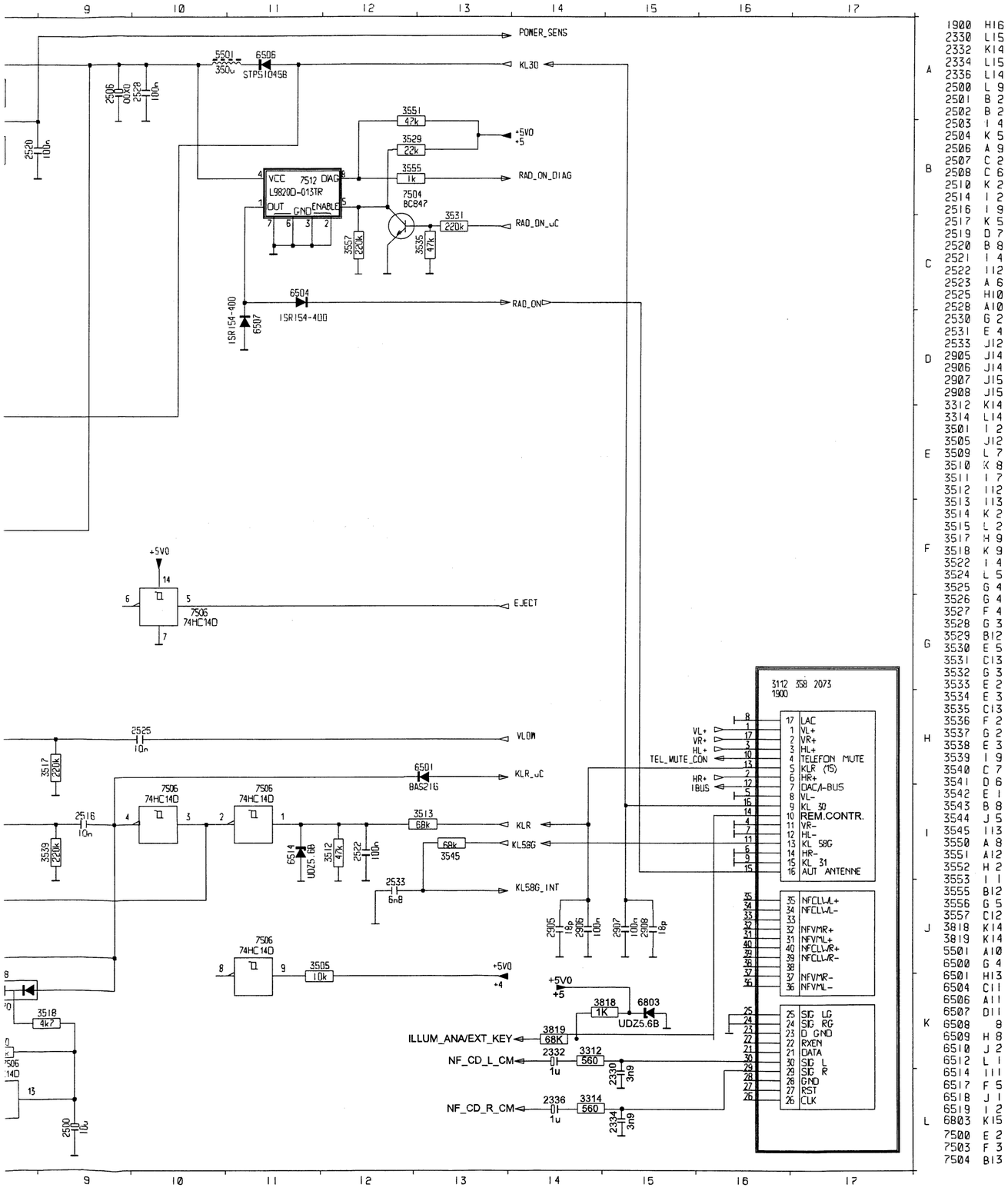
Pos. 7803, E100 20B
1, 2: n.c.
3: GND
4: 5.0 V
5, 6: (I-BUS)
7: 12 V
8, 9: GND
10: 4.7 V
11: 3.9 V
12: GND
13: 0 V
14: n.c.

Pos. 7805, BC857B
B: 4.4 V / 4.9 V (IGN. OFF)
C: 4.9 V / 0 V (IGN. OFF)
E: 5.0 V

20. CIRCUIT: POWER SUPPLY, ON-OFF LOGIC, CONNECTOR BLOCK



	1900	H16		7506	I11
	2330	L15		7506	I10
	2332	K14		7506	G10
A	2334	L15		7506	J11
	2336	L14		7506	H 5
	2500	L 9		7506	K 8
	2501	B 2		7508	F 1
	2502	B 2		7512	B11
	2503	I 4		7513	A 3
	2504	K 5		7515	K 4
	2506	A 9		7516	I 1
	2507	C 2			
B	2508	C 6			
	2510	K 2			
	2514	I 2			
	2516	I 9			
	2517	K 5			
	2519	D 7			
	2520	B 8			
C	2521	I 4			
	2522	I12			
	2523	A 6			
	2525	H10			
	2528	A10			
	2530	G 2			
	2531	E 4			
	2533	J12			
D	2905	J14			
	2906	J14			
	2907	J15			
	2908	J15			
	3312	K14			
	3314	L14			
	3501	I 2			
	3505	J12			
E	3509	L 7			
	3510	K 8			
	3511	I 7			
	3512	I12			
	3513	I13			
	3514	K 2			
	3515	L 2			
	3517	H 9			
F	3518	K 9			
	3522	I 4			
	3524	L 5			
	3525	G 4			
	3526	G 4			
	3527	F 4			
	3528	G 3			
	3529	B12			
G	3530	E 5			
	3531	C13			
	3532	G 3			
	3533	E 2			
	3534	E 3			
	3535	C13			
	3536	F 2			
	3537	G 2			
	3538	E 3			
H	3539	I 9			
	3540	C 7			
	3541	D 6			
	3542	E 1			
	3543	B 8			
	3544	J 5			
	3545	I13			
I	3550	A 8			
	3551	A12			
	3552	H 2			
	3553	I 1			
	3555	B12			
	3556	G 5			
	3557	C12			
J	3818	K14			
	3819	K14			
	5501	A10			
	6500	G 4			
	6501	H13			
	6504	C11			
	6506	A11			
	6507	D11			
K	6508	8			
	6509	H 8			
	6510	J 2			
	6512	L 1			
	6514	I11			
	6517	F 5			
	6518	J 1			
	6519	I 2			
L	6803	K15			
	7500	E 2			
	7503	F 3			
	7504	B13			



	1900	H16	7506	111
	2330	L15	7506	110
	2332	K14	7506	G10
	2334	L15	7506	J11
A	2336	L14	7506	H 5
	2500	L 9	7506	K 8
	2501	B 2	7508	F 1
	2502	B 2	7512	B11
	2503	1 4	7513	A 3
	2504	K 5	7515	K 4
	2506	A 9	7516	1 1
	2507	C 2		
B	2508	C 6		
	2510	K 2		
	2514	1 2		
	2516	1 9		
	2517	K 5		
	2519	D 7		
	2520	B 8		
	2521	1 4		
C	2522	112		
	2523	A 6		
	2525	H10		
	2528	A10		
	2530	G 2		
	2531	E 4		
	2533	J12		
D	2905	J14		
	2906	J14		
	2907	J15		
	2908	J15		
	3312	K14		
	3314	L14		
	3501	1 2		
	3505	J12		
E	3509	L 7		
	3510	K 8		
	3511	1 7		
	3512	112		
	3513	113		
	3514	K 2		
	3515	L 2		
	3517	H 9		
F	3518	K 9		
	3522	1 4		
	3524	L 5		
	3525	G 4		
	3526	G 4		
	3527	F 4		
	3528	G 3		
	3529	B12		
G	3530	E 5		
	3531	C13		
	3532	G 3		
	3533	E 2		
	3534	E 3		
	3535	C13		
	3536	F 2		
	3537	G 2		
H	3538	E 3		
	3539	1 9		
	3540	C 7		
	3541	D 6		
	3542	E 1		
	3543	B 8		
	3544	J 5		
I	3545	113		
	3550	A 8		
	3551	A12		
	3552	H 2		
	3553	1 1		
	3555	B12		
	3556	G 5		
	3557	C12		
J	3818	K14		
	3819	K14		
	5501	A10		
	6500	G 4		
	6501	H13		
	6504	C11		
	6506	A11		
	6507	D11		
K	6508	8		
	6509	H 8		
	6510	J 2		
	6512	L 1		
	6514	111		
	6517	F 5		
	6518	J 1		
	6519	1 2		
L	6803	K15		
	7500	E 2		
	7503	F 3		
	7504	B13		

Pos. 7500, BC847
B: 0 V
C: 5.0 V / 0 V (low or high voltage OFF)
E: 0 V

Pos. 7503, BC847
B: 0.6 V
C: 0 V
E: 0 V

Pos. 7504, BC847
B: 0 V / 0.6 V (Set OFF)
C: 4.5 V / 0 V (Set OFF)
E: GND

Pos. 7506, 74HC14D
1: 5.0 V
2, 3: 0 V / 5.0 V (IGN. OFF)
4: 5.0 V / 0 V (IGN. OFF)
5: 5.0 V
6: n.c.
7: GND
8: n.c.
9: 5.0 V
10: 0 V / 5.0 V (IGN. OFF)
11: 5.0 V / 0 V (IGN. OFF)
12: 0 V
13: 4.5 V
14: 5.0 V

Pos. 7508, BC857
B: 5.0 V / 0.1 V (low or high voltage OFF)
C: GND
E: 5.0 V / 0.7 V (low or high voltage OFF)

Pos. 7512, L9820D
1: 12 V
2, 3: GND
4: 12 V
5: 4.5 V / 0 V (Set OFF)
6, 7: GND
8: 5.0 V

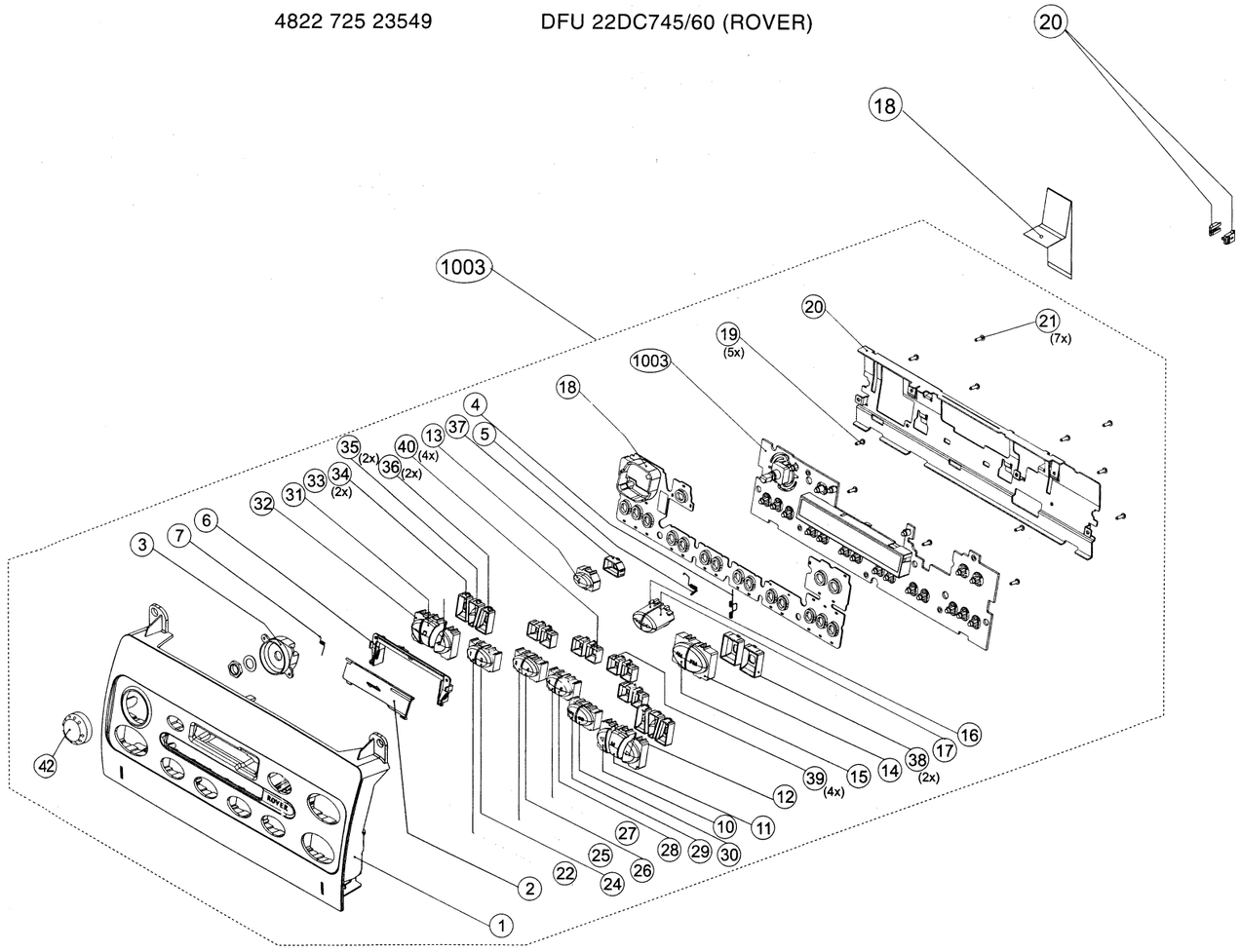
Pos. 7513, TDA3602
1: 12 V
2: 8.4 V
3: n.c.
4: 0.5 V / 5.0 V (IGN. OFF)
5: n.c.
6: GND
7: 5.0 V
8: 12 V
9: 4.9 V

Pos. 7515, HEF4528BT
1: GND
2, 3: 5.0 V
4, 5, 6: 0 V
7: n.c.
8: GND
9: 0 V
10: n.c.
11: 5.0 V
12: 2.5 V
13: 5.0 V
14: 2.0 V
15: GND
16: 5.0 V

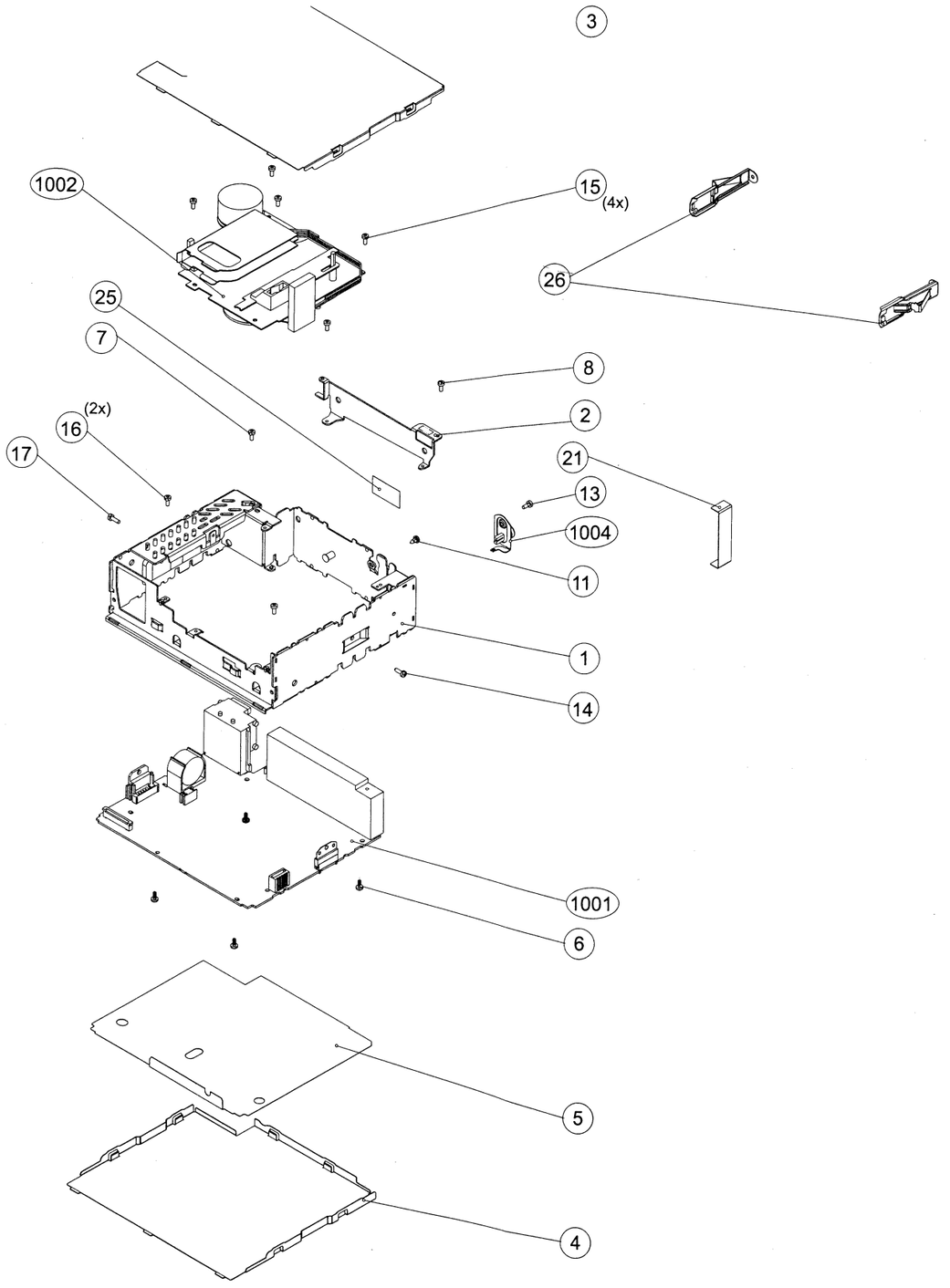
Pos. 7516, BC857
B: 4.9 V
C: 0 V
E: 4.9 V

22. MECHANICAL PARTS / ACCESSORIES ROVER C42R

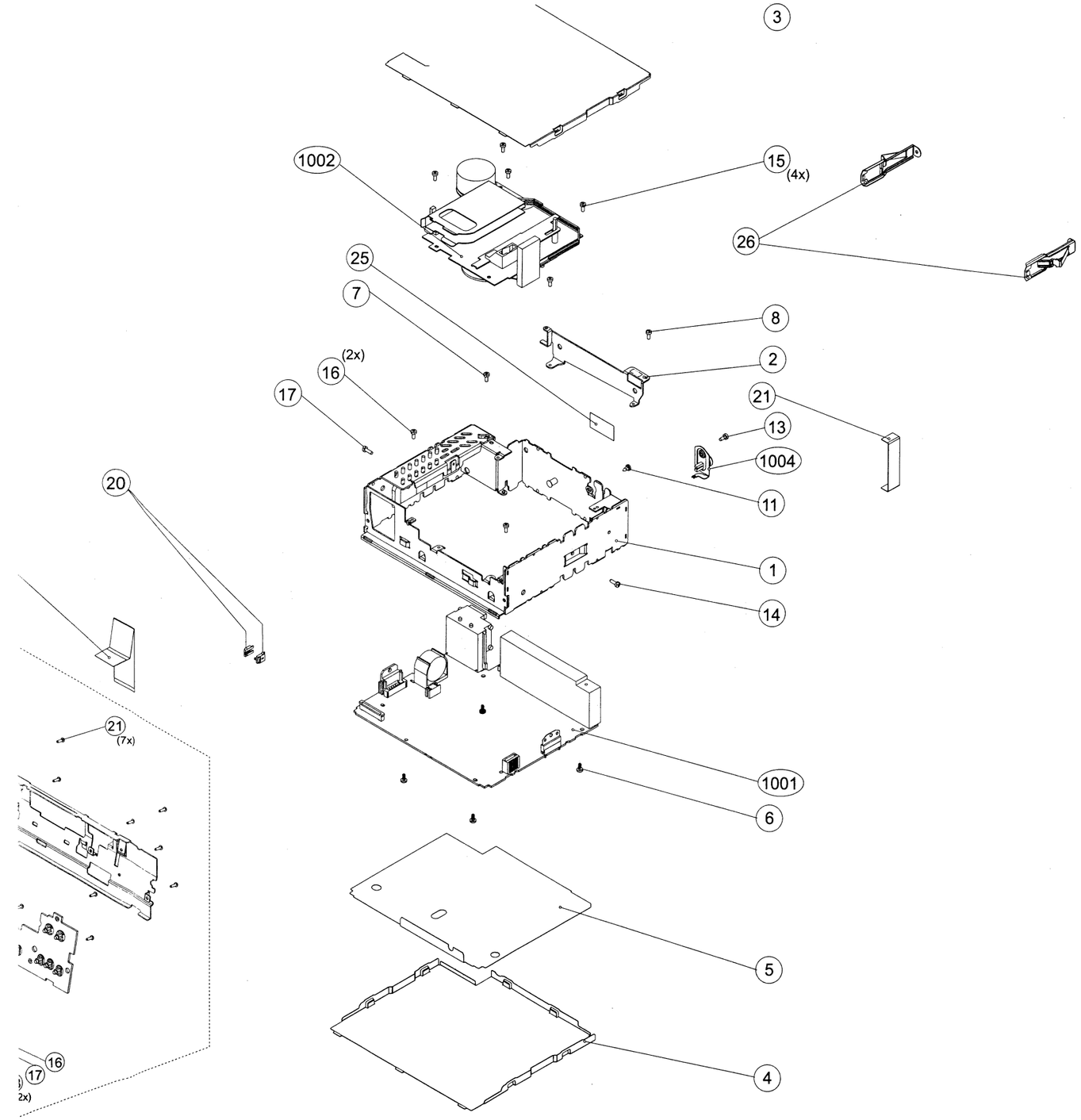
18	4822 320 12516	CABLE FLEX 23-FOLD
1002	4822 691 10467	LCA*5-4 TAPE DECK COMPLETE
1003	4822 459 05137	UNIT FRONT ASSY ROVER
1003-18	4822 466 12065	SWITCH MAT
1003-42	4822 413 41902	KNOB VOLUME
1003-1003	4822 214 12857	PWB FRONT LCD RD1/I ASS
1004	4822 267 31702	BUSH AERIAL ASSY SINGLE
	4822 725 23549	DFU 22DC745/60 (ROVER)



21. EXPLODED VIEW



21. EXPLODED VIEW



23. ELECTRICAL PARTS ROVER C42R

-Miscellaneous-

1000	4822 267 10644	CON BM V 23P
1002	4822 101 30873	EC11B15244 ROT. ENCODER
1050	4822 267 10644	CONNECTOR BM V 23P
1100	4822 210 10789	TUNER IC96 6SV
1200	4822 242 72195	QUARZ 4,332 MHZ AT51
1600	4822 242 10802	16.588 800 MHZ
1701	4822 265 11111	22-03-5115 (11P)
1711	4822 267 40818	TCS83S9V1 BURNDY
1900	4822 290 61213	CONNECTOR BLOCK ASSY
1002	4822 071 25002	257005.(5A) FUSE

-||-

2050	4822 126 13849	220NF 10% 16V
2051	4822 126 13849	220NF 10% 16V
2052	5322 122 34123	1NF 10% X7R 50V
2054	4822 124 41017	10µF 16V
2055	4822 124 80453	100µF 20% 10V
2056	4822 124 80791	470µF 16V 20% 85C DXH=8
2058	4822 124 23504	2.2µF 20% 50V
2100	5322 122 33538	150PF 2% NP0 63V
2101	5322 122 32654	22NF 10% X7R 63V
2102	5322 122 32654	22NF 10% X7R 63V
2200	4822 126 13689	18PF 1% NP0 63V
2201	4822 126 13689	18PF 1% NP0 63V
2202	5322 122 32654	22NF 10% X7R 63V
2203	5322 122 34123	1NF 10% X7R 50V
2204	4822 126 13196	100NF 10% 0805 X7R 25V
2205	5322 122 34098	10NF 10% X7R 63V
2206	5322 122 33538	150PF 2% NP0 63V
2207	5322 122 33538	150PF 2% NP0 63V
2208	5322 122 33538	150PF 2% NP0 63V
2209	5322 122 33538	150PF 2% NP0 63V
2210	4822 126 13692	47PF 1% NP0 63V
2211	4822 126 13196	100NF 10% 0805 X7R 25V
2213	5322 122 34098	10NF 10% X7R 63V
2214	4822 126 13691	27PF 1% NP0 63V
2215	4822 126 13692	47PF 1% NP0 63V
2216	4822 122 33216	270PF 5% NP0 50V
2217	5322 122 34098	10NF 10% X7R 63V
2218	4822 126 13689	18PF 1% NP0 63V
2219	5322 122 34123	1NF 10% X7R 50V
2220	4822 124 23504	2.2µF 20% 50V
2221	4822 124 41017	10µF 16V
2222	4822 126 13196	100NF 10% 0805 X7R 25V
2223	4822 124 41017	10µF 16V
2224	4822 124 23504	2.2µF 20% 50V
2225	5322 126 10223	4,7NF 10% X7R 63V
2226	4822 126 13196	100NF 10% 0805 X7R 25V
2227	5322 122 33538	150PF 2% NP0 63V
2300	4822 124 23279	22µF 20% 16V
2301	4822 124 23582	220µF 10V
2302	4822 126 13849	220NF 10% 16V
2303	4822 126 13849	220NF 10% 16V
2304	4822 126 13849	220NF 10% 16V
2305	4822 126 13849	220NF 10% 16V
2306	5322 122 31866	6,8NF 10% X7R 63V
2307	5322 122 31866	6,8NF 10% X7R 63V
2308	4822 124 11884	47NF 10% 0805 X7R 16V
2309	4822 126 13196	100NF 10% 0805 X7R 25V
2310	4822 126 13196	100NF 10% 0805 X7R 25V
2311	4822 122 32627	2.7NF 10% X7R 50V
2312	4822 124 11884	47NF 10% 0805 X7R 16V
2313	4822 124 11884	47NF 10% 0805 X7R 16V
2314	4822 126 13196	100NF 10% 0805 X7R 25V
2315	4822 126 13196	100NF 10% 0805 X7R 25V
2316	4822 122 32627	2.7NF 10% X7R 50V
2317	4822 126 13196	100NF 10% 0805 X7R 25V
2318	5322 122 34123	1NF 10% X7R 50V
2319	4822 126 13196	100NF 10% 0805 X7R 25V
2320	4822 126 13851	68NF 10% 16V
2321	4822 126 13851	68NF 10% 16V
2322	4822 126 13196	100NF 10% 0805 X7R 25V
2323	4822 124 41017	10µF 16V
2324	4822 126 13689	18PF 1% NP0 63V
2326	5322 122 34123	1NF 10% X7R 50V
2327	5322 122 34123	1NF 10% X7R 50V
2328	5322 122 34123	1NF 10% X7R 50V
2329	5322 122 34123	1NF 10% X7R 50V
2330	4822 122 32566	3,9NF 10% X7R 63V
2332	4822 124 23282	1µF 20% 50V
2334	4822 122 32566	3,9NF 10% X7R 63V
2336	4822 124 23282	1µF 20% 50V
2400	4822 124 23282	1µF 20% 50V
2401	4822 124 23282	1µF 20% 50V
2403	4822 124 23282	1µF 20% 50V
2404	4822 124 23282	1µF 20% 50V
2405	4822 124 41017	10µF 16V

2406	4822 124 22646	47µF 20% 16V
2407	4822 124 12069	2200µF 20% 10V
2408	4822 124 12069	2200µF 20% 10V
2409	4822 124 12069	2200µF 20% 10V
2410	4822 124 12069	2200µF 20% 10V
2412	4822 126 13196	100NF 10% 0805 X7R 25V
2413	5322 122 34098	10NF 10% X7R 63V
2414	5322 122 34098	10NF 10% X7R 63V
2415	5322 122 34098	10NF 10% X7R 63V
2416	5322 122 34098	10NF 10% X7R 63V
2423	4822 124 11884	47NF 10% 0805 X7R 16V
2500	4822 124 41017	10µF 16V
2501	4822 124 80453	100µF 20% 10V
2502	4822 124 22646	47µF 20% 16V
2503	5322 126 14103	2,2µF +80-20% Y5V 10V
2504	5322 126 14103	2,2µF +80-20% Y5V 10V
2506	4822 124 80769	2200µF 20% 16V
2507	4822 124 41017	10µF 16V
2508	4822 126 13196	100NF 10% 0805 X7R 25V
2510	4822 124 23282	1µF 20% 50V
2514	4822 124 23504	2.2µF 20% 50V
2516	5322 122 34098	10NF 10% X7R 63V
2517	5322 122 34098	10NF 10% X7R 63V
2519	5322 122 34098	10NF 10% X7R 63V
2520	4822 126 13196	100NF 10% 0805 X7R 25V
2521	5322 122 34123	1NF 10% X7R 50V
2522	4822 126 13196	100NF 10% 0805 X7R 25V
2523	4822 126 13849	220NF 10% 16V
2525	4822 124 11884	47NF 10% 0805 X7R 16V
2528	4822 126 13196	100NF 10% 0805 X7R 25V
2530	5322 122 34098	10NF 10% X7R 63V
2531	5322 122 34123	1NF 10% X7R 50V
2533	5322 122 31866	6,8NF 10% X7R 63V
2600	4822 124 41017	10µF 16V
2601	5322 122 34123	1NF 10% X7R 50V
2603	4822 126 13196	100NF 10% 0805 X7R 25V
2604	4822 126 13196	100NF 10% 0805 X7R 25V
2605	4822 124 11884	47NF 10% 0805 X7R 16V
2606	5322 122 32654	22NF10% X7R 63V
2607	5322 122 34123	1NF10% X7R 50V
2608	4822 126 13849	220NF 10% 16V
2609	4822 126 13196	100NF 10% 0805 X7R 25V
2610	4822 126 13693	56PF 1% NP0 63V
2611	4822 126 13689	18PF 1% NP0 63V
2612	4822 122 32627	2.7NF 10% X7R 50V
2613	4822 124 11884	47NF 10% 0805 X7R 16V
2614	4822 124 11884	47NF 10% 0805 X7R 16V
2615	5322 122 34123	1NF 10% X7R 50V
2700	5322 116 80853	560PF 5% NP0 63V
2701	5322 116 80853	560PF 5% NP0 63V
2702	5322 122 32654	22NF 10% X7R 63V
2703	5322 122 34098	10NF 10% X7R 63V
2704	4822 126 13851	68NF 10% 16V
2705	5322 122 32654	22NF 10% X7R 63V
2706	4822 122 32627	2.7NF 10% X7R 50V
2707	5322 122 34098	10NF 10% X7R 63V
2708	5322 122 34098	10NF 10% X7R 63V
2709	5322 116 80853	560PF 5% NP0 63V
2710	5322 116 80853	560PF 5% NP0 63V
2711	5322 122 34098	10NF 10% X7R 63V
2712	4822 124 80453	100µF 20% 10V
2713	4822 124 41017	10µF 16V
2714	4822 124 41017	10µF 16V
2715	4822 124 80453	100µF 20% 10V
2716	4822 124 41017	10µF 16V
2717	5322 116 80853	560PF 5% NP0 63V
2800	4822 126 13196	100NF 10% 0805 X7R 25V
2801	4822 126 13196	100NF 10% 0805 X7R 25V
2804	4822 124 41017	10µF 16V
2905	4822 126 13689	18PF 1% NP0 63V
2906	4822 126 13196	100NF 10% 0805 X7R 25V
2907	4822 126 13196	100NF 10% 0805 X7R 25V
2908	4822 126 13689	18PF 1% NP0 63V

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3053	4822 051 20332	3K30 5% 0,1W
3054	4822 051 20472	4K70 5% 0,1W
3055	4822 051 20472	4K70 5% 0,1W
3056	4822 051 20101	100R00 5% 0,1W
3057	4822 051 20101	100R00 5% 0,1W
3058	4822 117 10834	47K 1% 0,1W
3059	4822 051 20104	100K00 5% 0,1W
3060	4822 051 20102	1K00 5% 0,1W
3061	4822 117 10834	47K 1% 0,1W
3062	4822 051 20104	100K00 5% 0,1W
3063	4822 117 10834	47K 1% 0,1W
3064	4822 117 12955	2K7 1% 0,1W 0805
3065	4822 117 10833	10K 1% 0,1W
3066	4822 051 20102	1K00 5% 0,1W
3069	4822 051 20471	470R00 5% 0,1W
3070	4822 051 20471	470R00 5% 0,1W
3073	4822 117 10834	47K 1% 0,1W
3074	4822 117 12955	2K7 1% 0,1W 0805
3076	4822 051 20223	22K00 5% 0,1W
3077	4822 051 20223	22K00 5% 0,1W
3078	4822 051 20223	22K00 5% 0,1W
3079	4822 051 20008	0R00 JUMP. (0805)
3080	4822 051 20223	22K00 5% 0,1W
3081	4822 051 20223	22K00 5% 0,1W
3082	4822 051 20223	22K00 5% 0,1W
3083	4822 051 20223	22K00 5% 0,1W
3084	4822 051 20223	22K00 5% 0,1W
3085	4822 051 20223	22K00 5% 0,1W
3200	4822 051 20334	330K00 5% 0,1W
3201	4822 051 20008	0R00 JUMP. (0805)
3202	4822 117 10833	10K 1% 0,1W
3203	4822 051 20102	1K00 5% 0,1W
3204	4822 117 10833	10K 1% 0,1W
3205	4822 051 20104	100K00 5% 0,1W
3207	4822 051 20153	15K00 5% 0,1W
3208	4822 051 20332	3K30 5% 0,1W
3209	4822 051 20332	3K30 5% 0,1W
3210	4822 117 10833	10K 1% 0,1W
3211	4822 051 20393	39K00 5% 0,1W
3212	4822 051 20393	39K00 5% 0,1W
3213	4822 117 10833	10K 1% 0,1W
3214	4822 117 10833	10K 1% 0,1W
3215	4822 051 20824	820K00 5% 0,1W
3216	4822 117 10833	10K 1% 0,1W
3217	4822 051 20393	39K00 5% 0,1W
3218	4822 051 20393	39K00 5% 0,1W
3219	4822 117 10833	10K 1% 0,1W
3220	4822 051 20223	22K00 5% 0,1W
3221	4822 117 10965	18K 1% 0,1W
3222	4822 051 20225	2M20 5% 0,1W
3223	4822 051 20224	220K00 5% 0,1W
3224	4822 051 20223	22K00 5% 0,1W
3300	4822 117 12955	2K7 1% 0,1W 0805
3301	4822 117 12955	2K7 1% 0,1W 0805
3302	4822 051 20472	4K70 5% 0,1W
3303	4822 051 20472	4K70 5% 0,1W
3306	4822 051 20104	100K00 5% 0,1W
3307	4822 117 10833	10K 1% 0,1W
3309	4822 051 20104	100K00 5% 0,1W
3310	4822 051 20104	100K00 5% 0,1W
3311	4822 051 20104	100K00 5% 0,1W
3312	4822 051 20561	560R00 5% 0,1W
3314	4822 051 20561	560R00 5% 0,1W
3316	4822 051 20109	10R00 5% 0,1W
3317	4822 051 20109	10R00 5% 0,1W
3318	4822 051 20109	10R00 5% 0,1W
3319	4822 051 20109	10R00 5% 0,1W
3401	4822 051 20104	100K00 5% 0,1W
3402	4822 117 10834	47K 1% 0,1W
3404	4822 051 20472	4K70 5% 0,1W
3405	4822 051 20104	100K00 5% 0,1W
3413	4822 051 20109	10R00 5% 0,1W
3414	4822 051 20109	10R00 5% 0,1W
3415	4822 051 20109	10R00 5% 0,1W
3416	4822 051 20109	10R00 5% 0,1W
3501	4822 051 20104	100K00 5% 0,1W
3505	4822 117 10833	10K 1% 0,1W
3509	4822 051 20331	330R00 5% 0,1W
3510	4822 051 20474	470K00 5% 0,1W
3511	4822 051 20474	470K00 5% 0,1W
3512	4822 117 10834	47K 1% 0,1W
3513	4822 051 20683	68K00 5% 0,1W
3514	4822 051 20102	1K00 5% 0,1W
3515	4822 051 20104	100K00 5% 0,1W
3517	4822 051 20224	220K00 5% 0,1W
3518	4822 051 20472	4K70 5% 0,1W
3522	4822 117 10834	47K 1% 0,1W
3524	4822 051 20223	22K00 5% 0,1W
3525	4822 051 20122	1K20 5% 0,1W
3526	4822 117 11449	2K2 1% 0,1W
3527	4822 117 13472	5K1 1% 0805 RC12H R3
3528	4822 117 12817	4K7 5% 0,21W
3529	4822 051 20223	22K00 5% 0,1W
3530	4822 117 10837	100K 1% 0.1W
3531	4822 051 20224	220K00 5% 0,1W
3532	4822 051 20479	47R00 5% 0,1W
3533	4822 117 10833	10K 1% 0,1W
3534	4822 051 20104	100K00 5% 0,1W
3535	4822 117 10834	47K 1% 0,1W
3536	4822 117 10833	10K 1% 0,1W
3537	4822 051 20104	100K00 5% 0,1W
3538	4822 051 20104	100K00 5% 0,1W
3539	4822 051 20224	220K00 5% 0,1W
3540	4822 117 10833	10K 1% 0,1W
3541	4822 051 20102	1K00 5% 0,1W
3542	4822 117 10833	10K 1% 0,1W
3543	4822 117 10834	47K 1% 0,1W
3544	4822 051 20224	220K00 5% 0,1W
3545	4822 051 20683	68K00 5% 0,1W
3550	4822 051 20224	220K00 5% 0,1W
3551	4822 051 20223	22K00 5% 0,1W
3552	4822 117 10834	47K 1% 0,1W
3553	4822 051 20102	1K00 5% 0,1W
3555	4822 051 20102	1K00 5% 0,1W
3556	4822 051 20102	1K00 5% 0,1W
3557	4822 051 20224	220K00 5% 0,1W
3600	4822 051 20101	100R00 5% 0,1W
3601	4822 051 20102	1K00 5% 0,1W
3602	4822 051 20471	470R00 5% 0,1W
3603	4822 117 12955	2K7 1% 0,1W 0805
3604	4822 117 12955	2K7 1% 0,1W 0805
3606	4822 051 20102	1K00 5% 0,1W
3608	4822 051 20471	470R00 5% 0,1W
3609	4822 051 20109	10R00 5% 0,1W
3612	4822 051 20008	0R00 JUMP. (0805)
3613	4822 051 20471	470R00 5% 0,1W
3615	4822 051 20824	820K00 5% 0,1W
3616	4822 117 12955	2K7 1% 0,1W 0805
3617	4822 117 12955	2K7 1% 0,1W 0805
3618	4822 117 10834	47K 1% 0,1W
3619	4822 117 10834	47K 1% 0,1W
3620	4822 117 10834	47K 1% 0,1W
3621	4822 051 20104	100K00 5% 0,1W
3622	4822 117 10834	47K 1% 0,1W
3700	4822 051 20822	8K20 5% 0,1W
3701	4822 051 20104	100K00 5% 0,1W
3702	4822 051 20104	100K00 5% 0,1W
3703	4822 051 20122	1K20 5% 0,1W
3704	4822 051 20122	1K20 5% 0,1W
3705	4822 051 20104	100K00 5% 0,1W
3706	4822 051 20104	100K00 5% 0,1W
3707	4822 051 20188	1R80 5% 0,1W
3708	4822 051 20561	560R00 5% 0,1W
3709	4822 117 10834	47K 1% 0,1W
3710	4822 051 20332	3K30 5% 0,1W
3711	4822 051 20274	270K00 5% 0,1W
3712	4822 051 20822	8K20 5% 0,1W
3713	4822 117 10834	47K 1% 0,1W
3714	4822 051 20274	270K00 5% 0,1W
3715	4822 051 20822	8K20 5% 0,1W
3716	4822 117 10965	18K 1% 0,1W
3717	4822 051 20223	22K00 5% 0,1W
3718	4822 117 12955	2K7 1% 0,1W 0805
3719	4822 051 20479	47R00 5% 0,1W
3720	4822 051 20109	10R00 5% 0,1W
3721	4822 051 20104	100K00 5% 0,1W
3722	4822 051 20104	100K00 5% 0,1W
3723	4822 051 20104	100K00 5% 0,1W
3724	4822 051 20104	100K00 5% 0,1W
3725	4822 051 20223	22K00 5% 0,1W
3726	4822 051 20332	3K30 5% 0,1W
3727	4822 051 20332	3K30 5% 0,1W
3729	4822 051 20104	100K00 5% 0,1W
3730	4822 051 20223	22K00 5% 0,1W
3731	4822 051 20223	22K00 5% 0,1W
3732	4822 051	
3733	4822 051	
3734	4822 051	
3735	4822 051	
3739	4822 117	
3745	4822 117	
3800	4822 051	
3801	4822 117	
3802	4822 051	
3804	4822 117	
3805	4822 051	
3812	4822 051	
3813	4822 117	
3815	4822 051	
3816	4822 051	
3818	4822 051	
3819	4822 051	
3820	4822 051	
3821	4822 117	
3828	4822 051	
4050	4822 051	
4100	4822 051	
4101	4822 051	
4405	4822 051	
4407	4822 051	
4700	4822 051	
4701	4822 051	
4702	4822 051	
4703	4822 051	
4800	4822 051	

4801 4822 051

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5100	4822 157
5101	4822 157
5200	4822 157
5501	4822 157
5600	4822 157
5601	4822 157
5800	4822 157

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6050	5322 130
6051	4822 130
6052	4822 130
6200	5322 130
6201	5322 130
6300	4822 130
6500	4822 130
6501	4822 130
6504	4822 130
6505	4822 130
6507	4822 130
6508	5322 130
6509	4822 130
6510	5322 130
6512	5322 130
6514	4822 130
6517	4822 130
6518	4822 130
6519	4822 130

	3218	4822 051 20393	39K00 5% 0,1W
	3219	4822 117 10833	10K 1% 0,1W
	3220	4822 051 20223	22K00 5% 0,1W
	3221	4822 117 10965	18K 1% 0,1W
	3222	4822 051 20225	2M20 5% 0,1W
	3223	4822 051 20224	220K00 5% 0,1W
7R 25V	3224	4822 051 20223	22K00 5% 0,1W
7R 25V	3300	4822 117 12955	2K7 1% 0,1W 0805
	3301	4822 117 12955	2K7 1% 0,1W 0805
	3302	4822 051 20472	4K70 5% 0,1W
7R 25V	3303	4822 051 20472	4K70 5% 0,1W
7R 25V	3306	4822 051 20104	100K00 5% 0,1W
	3307	4822 117 10833	10K 1% 0,1W
	3309	4822 051 20104	100K00 5% 0,1W
	3310	4822 051 20104	100K00 5% 0,1W
	3311	4822 051 20104	100K00 5% 0,1W
	3312	4822 051 20561	560R00 5% 0,1W
	3314	4822 051 20561	560R00 5% 0,1W
	3316	4822 051 20109	10R00 5% 0,1W
	3317	4822 051 20109	10R00 5% 0,1W
	3318	4822 051 20109	10R00 5% 0,1W
	3319	4822 051 20109	10R00 5% 0,1W
	3401	4822 051 20104	100K00 5% 0,1W
	3402	4822 117 10834	47K 1% 0,1W
	3404	4822 051 20472	4K70 5% 0,1W
	3405	4822 051 20104	100K00 5% 0,1W
	3413	4822 051 20109	10R00 5% 0,1W
	3414	4822 051 20109	10R00 5% 0,1W
	3415	4822 051 20109	10R00 5% 0,1W
	3416	4822 051 20109	10R00 5% 0,1W
	3501	4822 051 20104	100K00 5% 0,1W
	3505	4822 117 10833	10K 1% 0,1W
	3509	4822 051 20331	330R00 5% 0,1W
	3510	4822 051 20474	470K00 5% 0,1W
	3511	4822 051 20474	470K00 5% 0,1W
	3512	4822 117 10834	47K 1% 0,1W
	3513	4822 051 20683	68K00 5% 0,1W
	3514	4822 051 20102	1K00 5% 0,1W
	3515	4822 051 20104	100K00 5% 0,1W
	3517	4822 051 20224	220K00 5% 0,1W
	3518	4822 051 20472	4K70 5% 0,1W
	3522	4822 117 10834	47K 1% 0,1W
	3524	4822 051 20223	22K00 5% 0,1W
	3525	4822 051 20122	1K20 5% 0,1W
	3526	4822 117 11449	2K2 1% 0,1W
	3527	4822 117 13472	5K1 1% 0805 RC12H R3
	3528	4822 117 12817	4K7 5% 0,21W
	3529	4822 051 20223	22K00 5% 0,1W
	3530	4822 117 10837	100K 1% 0.1W
	3531	4822 051 20224	220K00 5% 0,1W
	3532	4822 051 20479	47R00 5% 0,1W
	3533	4822 117 10833	10K 1% 0,1W
	3534	4822 051 20104	100K00 5% 0,1W
	3535	4822 117 10834	47K 1% 0,1W
	3536	4822 117 10833	10K 1% 0,1W
	3537	4822 051 20104	100K00 5% 0,1W
	3538	4822 051 20104	100K00 5% 0,1W
	3539	4822 051 20224	220K00 5% 0,1W
	3540	4822 117 10833	10K 1% 0,1W
	3541	4822 051 20102	1K00 5% 0,1W
	3542	4822 117 10833	10K 1% 0,1W
	3543	4822 117 10834	47K 1% 0,1W
	3544	4822 051 20224	220K00 5% 0,1W
	3545	4822 051 20683	68K00 5% 0,1W
	3550	4822 051 20224	220K00 5% 0,1W
	3551	4822 051 20223	22K00 5% 0,1W
	3552	4822 117 10834	47K 1% 0,1W
	3553	4822 051 20102	1K00 5% 0,1W
	3555	4822 051 20102	1K00 5% 0,1W
	3556	4822 051 20102	1K00 5% 0,1W
	3557	4822 051 20224	220K00 5% 0,1W
	3600	4822 051 20101	100R00 5% 0,1W
	3601	4822 051 20102	1K00 5% 0,1W
	3602	4822 051 20471	470R00 5% 0,1W
	3603	4822 117 12955	2K7 1% 0,1W 0805
	3604	4822 117 12955	2K7 1% 0,1W 0805
	3606	4822 051 20102	1K00 5% 0,1W
	3608	4822 051 20471	470R00 5% 0,1W
	3609	4822 051 20109	10R00 5% 0,1W
	3612	4822 051 20008	0R00 JUMP. (0805)
	3613	4822 051 20471	470R00 5% 0,1W
	3615	4822 051 20824	820K00 5% 0,1W
	3616	4822 117 12955	2K7 1% 0,1W 0805
	3617	4822 117 12955	2K7 1% 0,1W 0805
	3618	4822 117 10834	47K 1% 0,1W
	3619	4822 117 10834	47K 1% 0,1W
	3620	4822 117 10834	47K 1% 0,1W
	3621	4822 051 20104	100K00 5% 0,1W
	3622	4822 117 10834	47K 1% 0,1W
	3700	4822 051 20822	8K20 5% 0,1W
	3701	4822 051 20104	100K00 5% 0,1W
	3702	4822 051 20104	100K00 5% 0,1W
	3703	4822 051 20122	1K20 5% 0,1W
	3704	4822 051 20122	1K20 5% 0,1W
	3705	4822 051 20104	100K00 5% 0,1W
	3706	4822 051 20104	100K00 5% 0,1W
	3707	4822 051 20188	1R80 5% 0,1W
	3708	4822 051 20561	560R00 5% 0,1W
	3709	4822 117 10834	47K 1% 0,1W
	3710	4822 051 20332	3K30 5% 0,1W
	3711	4822 051 20274	270K00 5% 0,1W
	3712	4822 051 20822	8K20 5% 0,1W
	3713	4822 117 10834	47K 1% 0,1W
	3714	4822 051 20274	270K00 5% 0,1W
	3715	4822 051 20822	8K20 5% 0,1W
	3716	4822 117 10965	18K 1% 0,1W
	3717	4822 051 20223	22K00 5% 0,1W
	3718	4822 117 12955	2K7 1% 0,1W 0805
	3719	4822 051 20479	47R00 5% 0,1W
	3720	4822 051 20109	10R00 5% 0,1W
	3721	4822 051 20104	100K00 5% 0,1W
	3722	4822 051 20104	100K00 5% 0,1W
	3723	4822 051 20104	100K00 5% 0,1W
	3724	4822 051 20104	100K00 5% 0,1W
	3725	4822 051 20223	22K00 5% 0,1W
	3726	4822 051 20332	3K30 5% 0,1W
	3727	4822 051 20332	3K30 5% 0,1W
	3729	4822 051 20104	100K00 5% 0,1W
	3730	4822 051 20223	22K00 5% 0,1W
	3731	4822 051 20223	22K00 5% 0,1W
	3732	4822 051 20104	100K00 5% 0,1W
	3733	4822 051 20104	100K00 5% 0,1W
	3734	4822 051 20104	100K00 5% 0,1W
	3735	4822 051 20223	22K00 5% 0,1W
	3739	4822 117 10507	24K 1% 0.1W
	3745	4822 117 10507	24K 1% 0.1W
	3800	4822 051 20332	3K30 5% 0,1W
	3801	4822 117 10965	18K 1% 0,1W
	3802	4822 051 20109	10R00 5% 0,1W
	3804	4822 117 10834	47K 1% 0,1W
	3805	4822 051 20104	100K00 5% 0,1W
	3812	4822 051 20683	68K00 5% 0,1W
	3813	4822 117 12955	2K7 1% 0,1W 0805
	3815	4822 051 20223	22K00 5% 0,1W
	3816	4822 051 20104	100K00 5% 0,1W
	3818	4822 051 20102	1K00 5% 0,1W
	3819	4822 051 20683	68K00 5% 0,1W
	3820	4822 051 20223	22K00 5% 0,1W
	3821	4822 117 10833	10K 1% 0,1W
	3828	4822 051 20479	47R00 5% 0,1W
	4050	4822 051 20472	4K70 5% 0,1W
	4100	4822 051 20008	0R00 JUMP. (0805)
	4101	4822 051 20008	0R00 JUMP. (0805)
	4405	4822 051 20008	0R00 JUMP. (0805)
	4407	4822 051 20008	0R00 JUMP. (0805)
	4700	4822 051 20008	0R00 JUMP. (0805)
	4701	4822 051 20008	0R00 JUMP. (0805)
	4702	4822 051 20008	0R00 JUMP. (0805)
	4703	4822 051 20008	0R00 JUMP. (0805)
	4800	4822 051 20008	0R00 JUMP. (0805)
	4801	4822 051 20008	0R00 JUMP. (0805)

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	5100	4822 157 71267	BLM31B601SPT
	5101	4822 157 71267	BLM31B601SPT
	5200	4822 157 71267	BLM31B601SPT
	5501	4822 157 11396	350µH
	5600	4822 157 71267	BLM31B601SPT
	5601	4822 157 71267	BLM31B601SPT
	5800	4822 157 10396	LQH4N 33µH 10%

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	6050	5322 130 34337	BAV99
	6051	4822 130 11013	UDZ16B
	6052	4822 130 10655	1SR154-400
	6200	5322 130 34337	BAV99
	6201	5322 130 34337	BAV99
	6300	4822 130 83757	BAS216
	6500	4822 130 83757	BAS216
	6501	4822 130 83757	BAS216
	6504	4822 130 10655	1SR154-400
	6505	4822 130 11048	STPS1045BO
	6507	4822 130 10655	1SR154-400
	6508	5322 130 34331	BAV70
	6509	4822 130 82594	BAT54C
	6510	5322 130 34331	BAV70
	6512	5322 130 30691	BAW56
	6514	4822 130 10185	UDZ5.6B
	6517	4822 130 11013	UDZ16B
	6518	4822 130 83757	BAS216
	6519	4822 130 83757	BAS216
	6700	5322 130 34337	BAV99
	6702	4822 130 10655	1SR154-400
	6802	4822 130 83757	BAS216
	6803	4822 130 10185	UDZ5.6B
	6804	5322 130 30691	BAW56

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	7050	4822 130 60511	BC847B
	7052	4822 130 60511	BC847B
	7053	5322 130 60508	BC857B
	7054	4822 130 42132	BC807
	7055	4822 130 60511	BC847B
	7056	4822 130 42132	BC807
	7057	5322 130 60508	BC857B
	7200	4822 130 60511	BC847B
	7201	4822 209 15823	TL074ID
	7205	4822 209 15824	TDA7331
	7300	4822 209 12723	TDA7342
	7301	4822 209 30095	LM833D
	7400	4822 130 60511	BC847B
	7402	4822 209 33629	TDA7375
	7500	4822 130 60511	BC847B
	7503	4822 130 60511	BC847B
	7504	4822 130 60511	BC847B
	7506	5322 209 11548	74HC14D
	7508	5322 130 60508	BC857B
	7512	4822 209 15826	L9820D
	7513	4822 209 33029	TDA3602/N3
	7515	5322 209 14877	HEF4528BT
	7516	5322 130 60508	BC857B
	7601	4822 209 15827	ST24C16M6
	7602	5322 130 60508	BC857B
	7700	4822 130 60511	BC847B
	7701	4822 130 60511	BC847B
	7703	4822 130 60511	BC847B
	7704	4822 130 60511	BC847B
	7705	4822 130 60511	BC847B
	7706	4822 130 60511	BC847B
	7707	4822 130 41078	BC640
	7708	4822 130 60511	BC847B
	7710	4822 209 15349	TEA0676T/V1
	7800	4822 130 60511	BC847B
	7801	4822 130 60511	BC847B
	7803	4822 209 15825	E100.20B
	7805	5322 130 60508	BC857B

Service
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Service

PHIL-04728

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für Philips Car Systems
erhalten Sie bei:
KiVi Service GmbH
Windmühlenstr. 41 · 31178 Giesen/Emmerke
Tel.: 0 51 21 / 6 00 20 · Fax 0 51 21 / 60 02 54

Service Manual

12 V ⊖|▸

TECHNICAL DATA

Operating voltage	: 9 - 16V (nom. 13.2V)
Tape speed	: 4.76cm/sec ± 0.5%
Wow & flutter	: ≤ 0.35% RMS (+10 - +45°C)
Crosstalk (track 2-3)	: < -40dB
Fast wind time	: ≤ 115secs (C-60)
Number of tracks	: 2x2
Channel separation (Tracks 1-2/3-4)	: > 35dB

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Car cassette deck LCA 2.4

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Windmühlenstr. 41 · 31178 Giesen/Emmerke
Tel.: 0 51 21 / 60 0 20 · Fax 0 51 21 / 60 02 54

PHIL-04728

Service Manual

12 V

TECHNICAL DATA

Operating voltage	: 9 - 16V (nom. 13.2V)
Tape speed	: 4.76cm/sec ± 0.5%
Wow & flutter	: ≤ 0.35% RMS (+10 - +45°C)
Crosstalk (track 2-3)	: < -40dB
Fast wind time	: ≤ 115secs (C-60)
Number of tracks	: 2x2
Channel separation (Tracks 1-2/3-4)	: > 35dB

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GENERAL

The LCA2.4 has the following features:

- Dolby
- "Key-Off" standby
- Automatic Music sensor System
- Metal / Ferro tape selector switch

MAINTENANCE

The cassette mechanism requires periodic cleaning, as well as periodic lubrication of the principal points.

1. Cleaning with alcohol or spirit

- Playback head (pos.332).
- Pressure rollers & capstans (pos.17, 57 and 58).
- Belt (pos.207) & pulley (pos.39).

To clean head, pressure roller and capstan, it is also possible to use drop-in cassette SBC114 (4822 389 20035).

2. Lubrication

Refer to the 'Lubrication Overview' on page 5.

ADJUSTMENTS AND CHECKS

Equipment required:
- Universal test cassette SBC419 (4822 397 30069)
- Universal test cassette SBC420 (4822 397 30071)
- Friction test cassette 811/CTM (4822 395 30054)
- Spring scale 50-500g (4822 395 80028)
- Puller for clutch (4822 395 60039)
- Wow & flutter meter
- AC millivoltmeters
- Spring scale 50-500 g

1. Pressure roller pressure

The pressure on the capstans should be 210 - 370 grammes (2.1 - 3.7N).
This pressure is measured as follows (NOR and REV):
- Select Play mode.
- Push the pressure roller back at the shown point by means of the spring scale.
- At the point where pressure roller and capstan just disengage the spring scale should be read.
- If the pressure is incorrect, replace spring 19.

2. Friction clutch (Reel assy)

- Insert friction test cassette 811/CTM (NOR and REV).
- Play take-up torque should be 35 - 75g/cm.
- Fast wind torque should be 40 - 150g/cm.
- If the torque is not correct, replace reel assy.

3. Wow & flutter/tape speed (Fig. G)

This check is carried out on a complete car radio; proceed as follows:
- Connect the wow & flutter meter to the LS outputs.
- Insert test cassette SBC419 (or SBC420) and play the 3150Hz signal.
- The wow & flutter value should be ≤ 0.35%.
- Tape speed should be 4.76cm/sec. ± 0.5%.
- The tape speed can be adjusted with screw "S".

In case of an excessive wow & flutter value, check following parts for correct functioning:
- motor 320
- pressure (pinch) rollers 17
- belt 207
- friction clutches (reel assy's)
- flywheels 57 and 58
- pulley 39

4. Azimuth (Figs. G, H)

This check is carried out on a complete car radio; proceed as follows:
- Apply a 4Ω load to both loudspeaker outputs.
- Connect an AC millivoltmeter across both loudspeaker outputs.
- Play the 10kHz signal of test cassette SBC419 or SBC420.
- Adjust screw 'A' for the average of the max. output voltages.
- The maximum allowed difference between both channels is 4 dB.
- Switch over to 'reverse play'.
- If the value measured differs from the previously measured value, bearing 49 in the front flywheel ("reverse") should be displaced.

5. Flywheels 57, 58

Refer to Fig. J.

DISASSEMBLY INSTRUCTIONS

Notes:
In a few places parts are locked by synthetic bosses. To be able to dismantle these parts, the bosses have to be bent, displaced etc.
Gearwheels 33 and 34 and pressure rollers 17 are attached to the spindles by means of a snap connection. These parts can be disassembled carefully with a screwdriver.
If gearwheel 33 (or 34) has to be replaced, the corresponding bracket 12 (or 13) should ALSO be replaced.

Belt 207, Fly wheels 57 & 58, Cog wheel assy 12 & 33
See figure A.

Pressure roller 17, Head assy 332
See figure B.

Head bracket 298
See figure C.

Clutch 6
See figure D.

Cog wheels 30, 31, 34
See figure E.

Reel base assy
See figure F.

BELT 207, FLY WHEELS 57 & 58, COG WHEEL ASSY 12,33

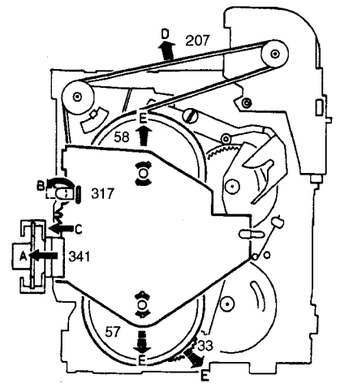


Fig. A

PRESSURE ROLLER 17, HEAD 332

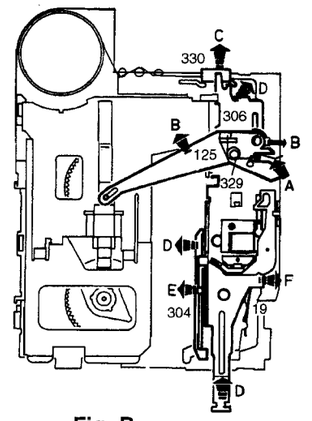


Fig. B

HEAD BRACKET 298

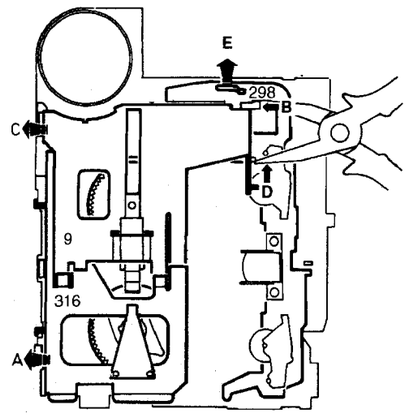


Fig. C

CLUTCH 6

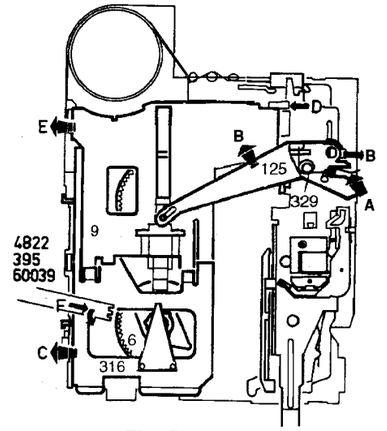


Fig. D

COG WHEELS 30, 31, 34

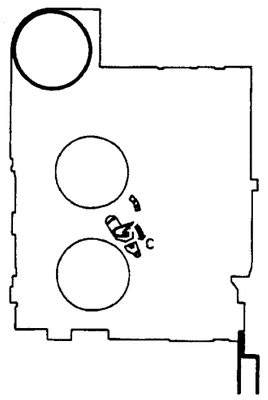


Fig. E

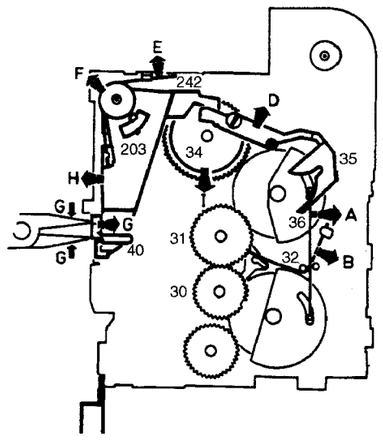


Fig. F

PCS 81 012

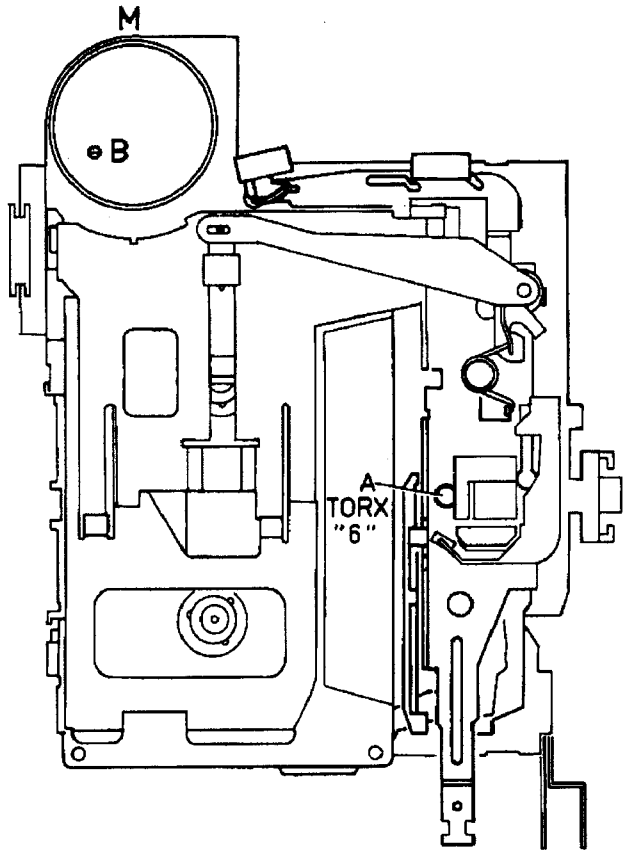


Fig. G

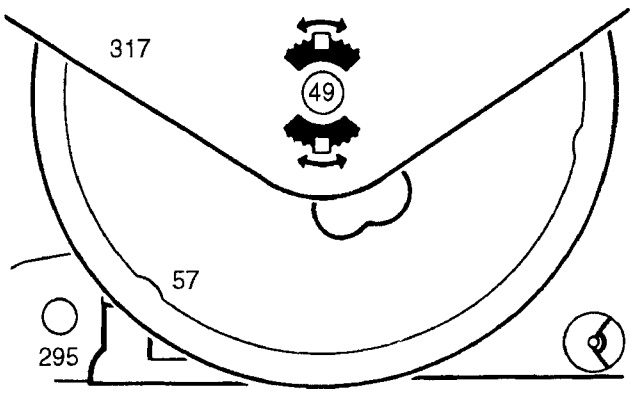


Fig. H

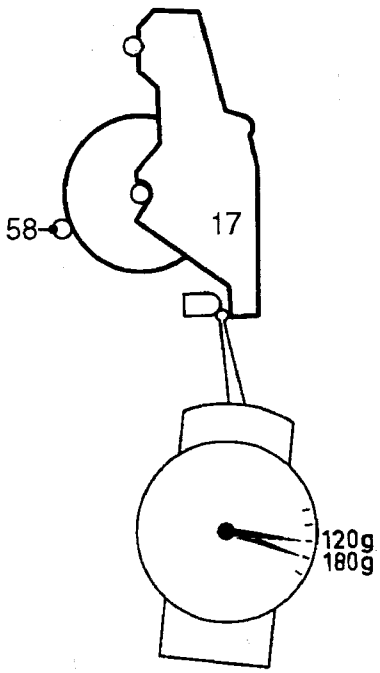


Fig. I

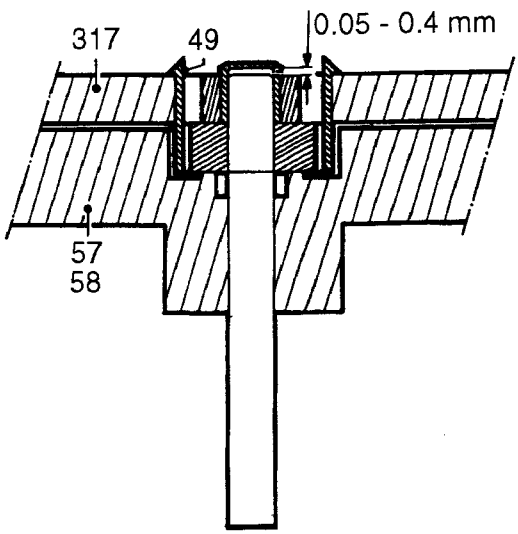
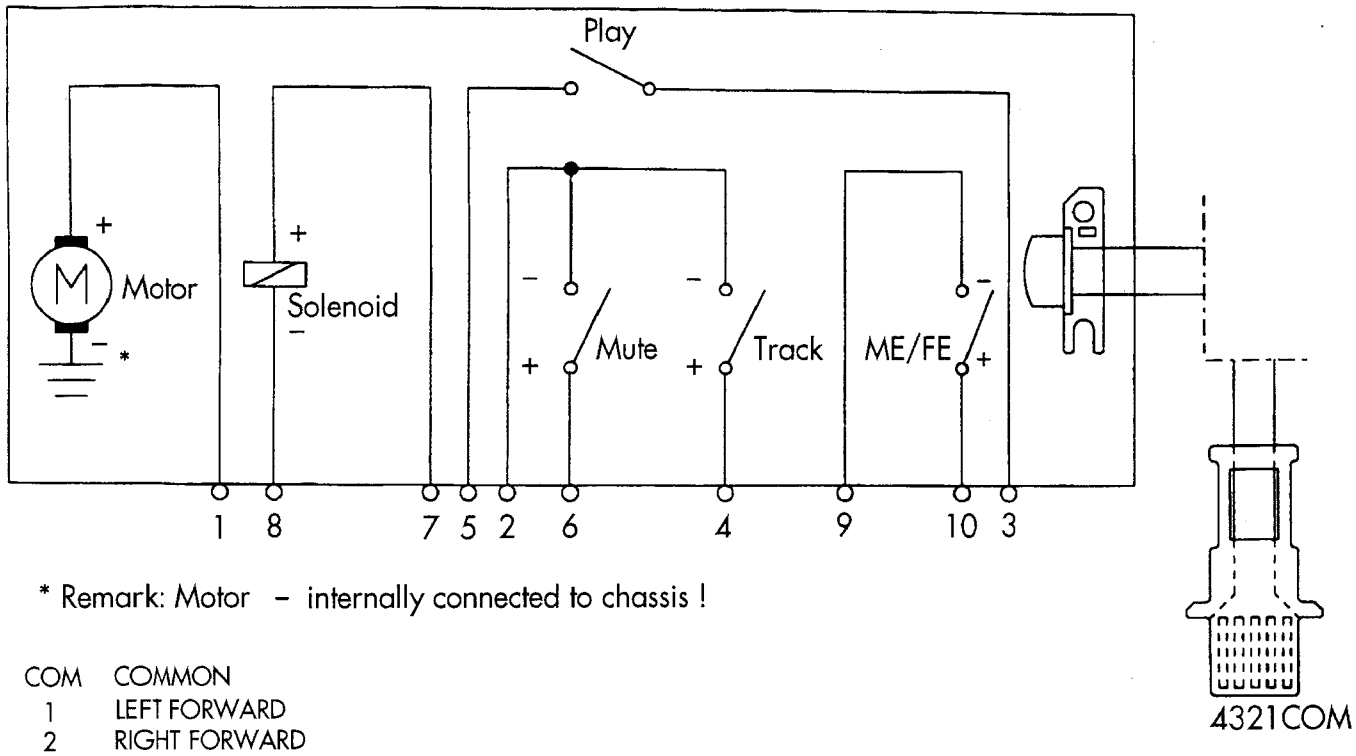


Fig. J

CONNECTIONS



* Remark: Motor – internally connected to chassis !

COM	COMMON
1	LEFT FORWARD
2	RIGHT FORWARD
3	RIGHT REVERSE
4	LEFT REVERSE

Fig. K

Fig. N

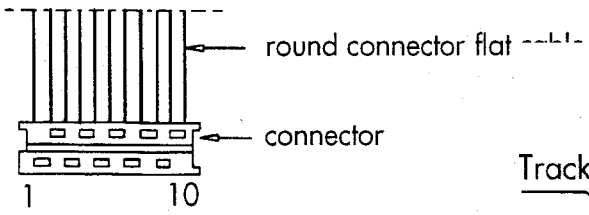


Fig. L

wire	colour	function
1	red	Motor+
2	brown	COMMON
3	orange	+14V
4	yellow	Track SW
5	green	Play SW
6	blue	Mute SW
7	violet	+ Solenoid
8	grey	– Solenoid
9	white	– ME/FE
10	black	+ ME/FE

Fig. O

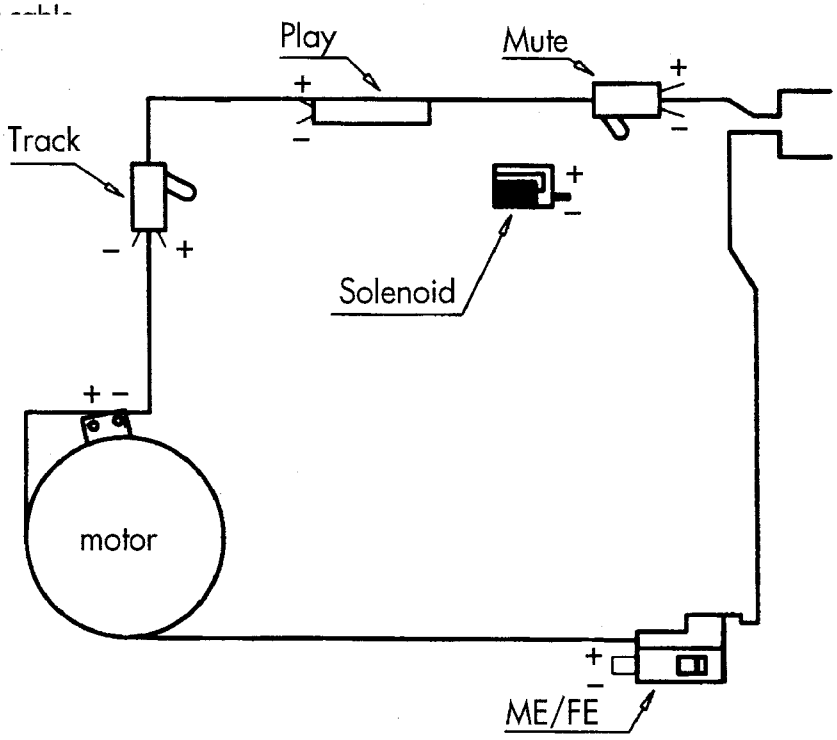
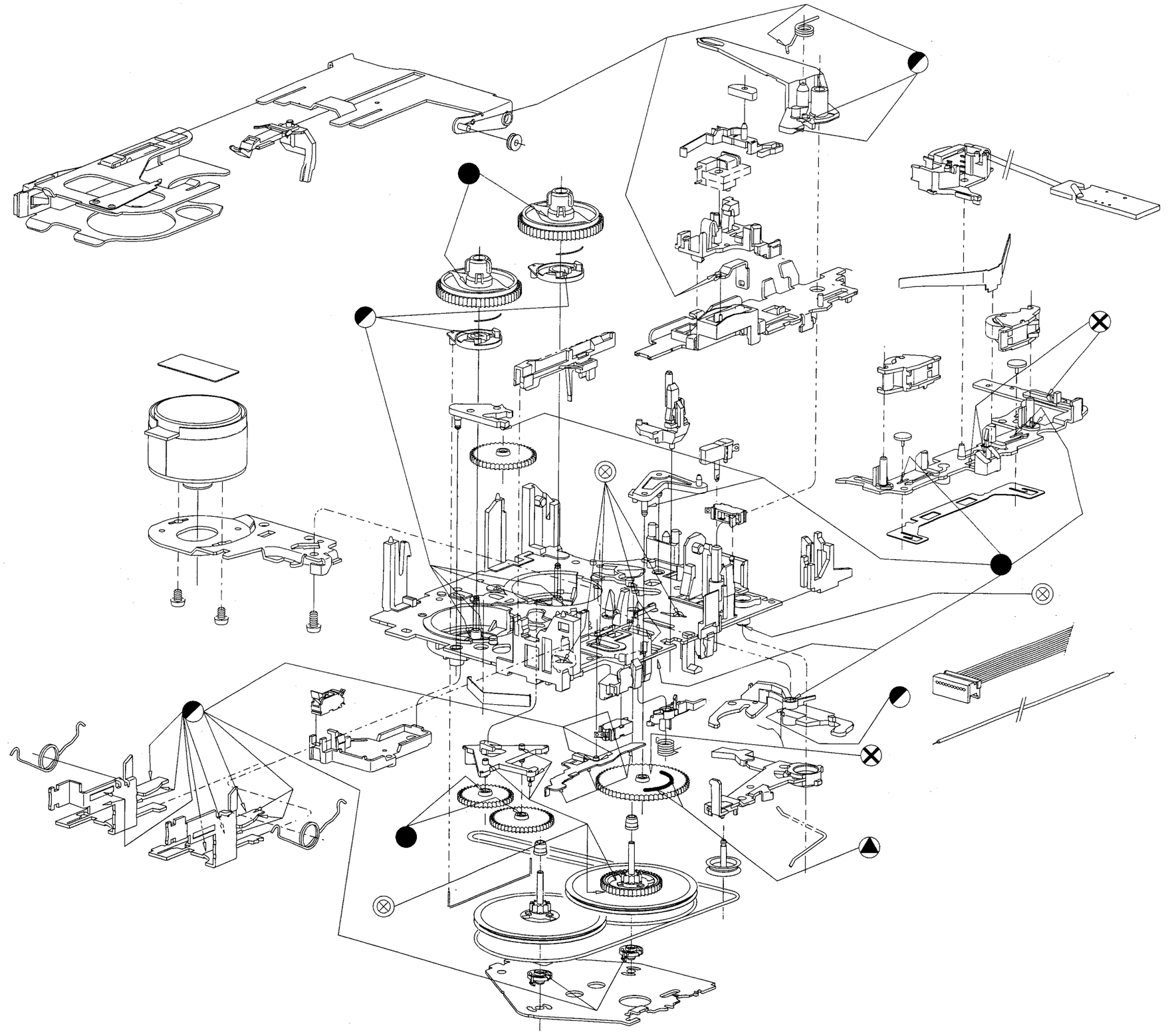


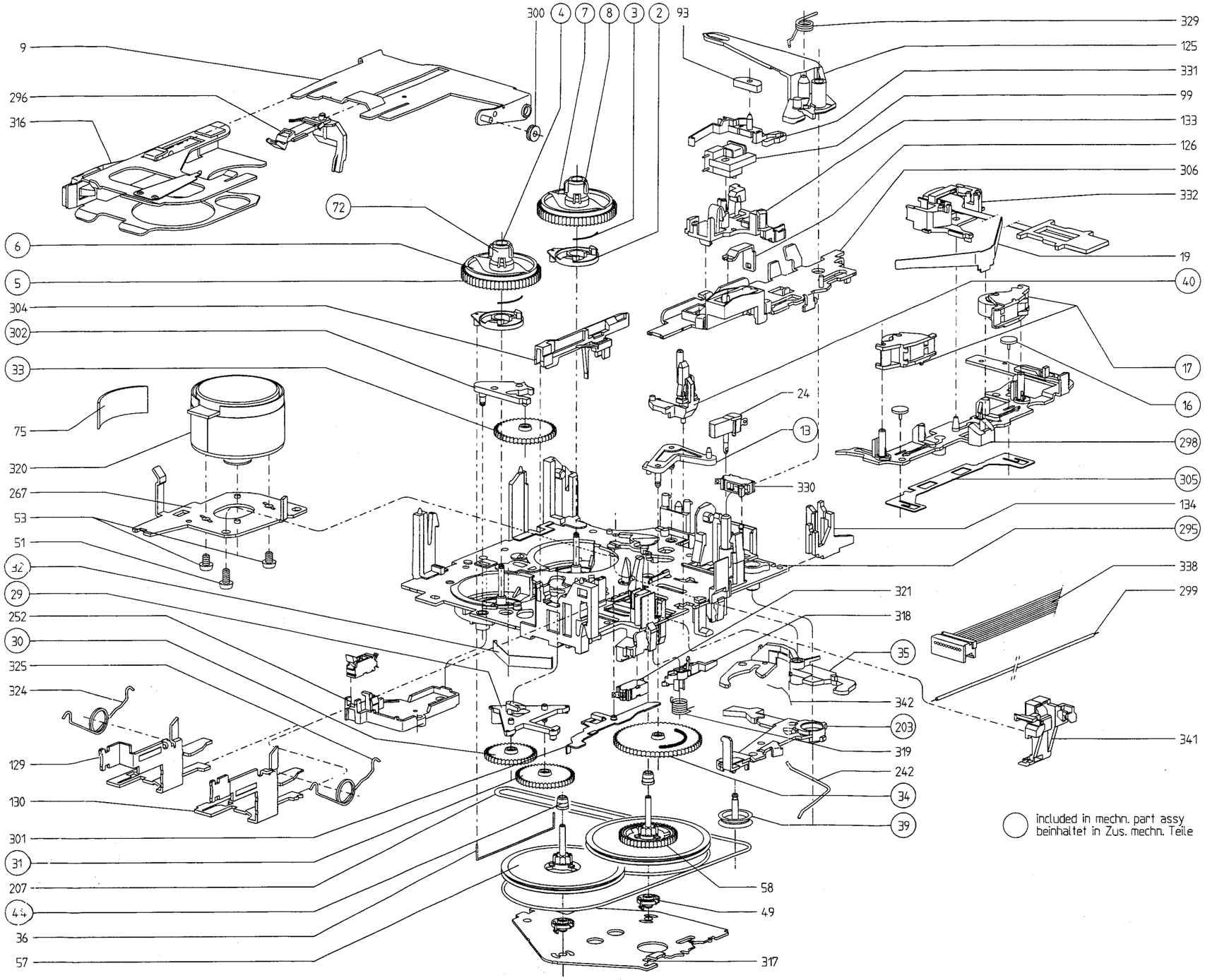
Fig. M

LUBRICATION OVERVIEW



- Contact Oel PDP 65
- Grease Topas L30
- Grease SM 30 TF
- Grease Gleitmo 585 K
- Grease 4

EXPLODED VIEW



PARTS LISTS

2/3	4822 466 70527	Disc assy
4/5/6/7/8	4822 466 70526	Coupling felt assy white
4/5/6/7/72	4822 528 10898	Coupling felt assy black
9	4822 466 81479	Cassette lift
16	4822 528 80983	Fixation
17	4822 403 40157	Pressure roller assy
24	4822 276 13081	Play switch
29/30/31	4822 522 20327	Gear assy
32	4822 492 71468	Leaf spring
35	4822 403 52031	Gear arm
36	4822 492 90076	Lever
39	4822 528 81144	Pulley
40	4822 403 10225	Holder
44	4822 520 30406	Bush bearing
49	4822 520 30407	Excentric
53	4822 502 12548	Special screw
54/207	4822 358 30405	Driving belt
58	4822 528 81517	Fly wheel assy
93	4822 281 60165	Anchor plate
99	4822 281 50113	Solenoid magnet
125	4822 403 71287	Lever eject
126	4822 403 71286	Lever blocking
133	4822 466 83076	Plate solenoid II
203	4822 404 21169	Arm
296	4822 256 92317	Holder cassette
298	4822 403 71282	Head support bracket
304	4822 462 30632	Band conductor
306	4822 403 71283	Push button rod
318	4822 403 71284	Latch
319	4822 492 42774	Spring latch
320	4822 361 21764	Motor MSI-5 CCW
321	4822 276 13617	Switch mute
330	4822 276 13616	Switch track
331	4822 403 71285	Lever solenoid
332	4822 249 30227	Magnetic head
	4822 691 10438	Deck LCA2.4 complete

Lubrication greases/oils

4822 390 10107	Isoflex PDP 65, 30ML
4822 390 20128	Isoflex TOPAS L 30
4822 390 20116	Grease 004, 100G CAN
4822 390 20128	Isoflex TOPAS L 30

Car cassette deck LCA 5.2
LCA 5.4

Service
Service
Service

Supplement

ERSATZTEILE
für Philips Car Systems
erhalten Sie bei:
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PHIL -05363

Service Manual

12 V

This supplement should be used together with the LCA 2.4 Service Manual with service code: 4822 725 23523. 4228

This supplement contains: technical data, general information, connector and switch overviews, exploded views and partslists for both the LCA 5.2 and LCA 5.4 tape decks.
For all parts not mentioned here, refer to the LCA 2.4 Service Manual.

TECHNICAL DATA

Operating voltage	: 9 - 16V (nom. 13.2V)
Tape speed	: 4.76cm/sec ± 0.5%
Wow & Flutter	: ≤ 0.35% RMS (+10 - +45°C)
Crosstalk (track 2-3)	: < -40dB
Fast wind time	: ≤ 115sec (C-60)
Number of tracks	: 2x2
Channel separation (Tracks 1-2/3-4)	: > 35dB

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PHILIPS

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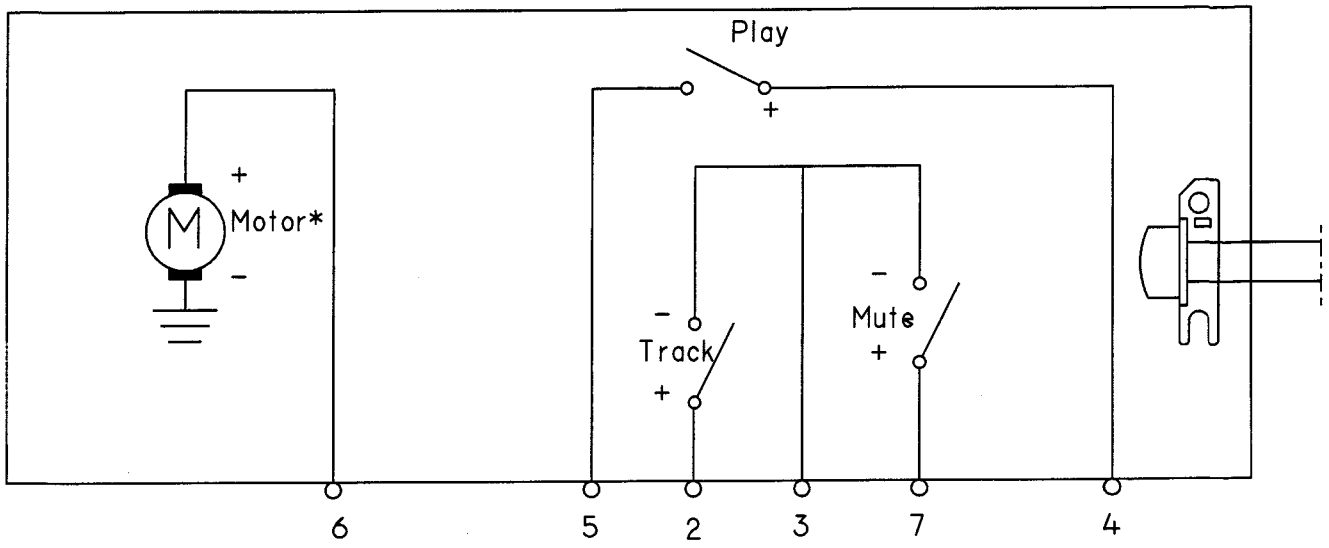
GENERAL

The differences between the LCA 2.4 and **LCA 5.2** are:
- capstan motor at left side instead of rear
- no "Key-Off" standby
- no Automatic Music sensor system
- no Metal / Ferro tape selector switch
- interface connector
- changed position of wind buttons

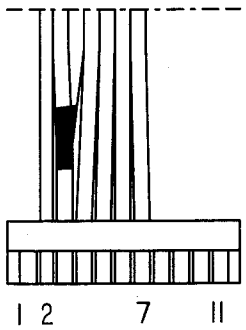
The differences between the LCA 2.4 and **LCA 5.4** are:
- capstan motor at left side instead of rear
- interface connector
- changed position of wind buttons

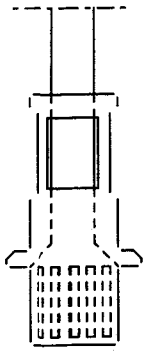
PCS 81 637

LCA 5.2 CONNECTOR AND SWITCH OVERVIEW

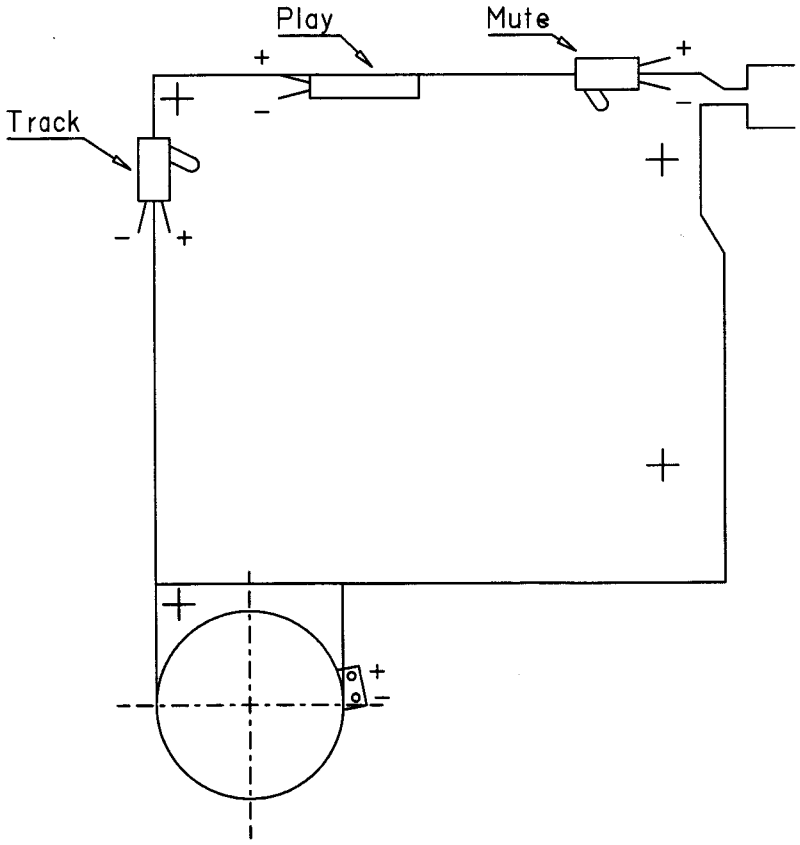


*Remark: Motor – internally connected to chassis!





COM	common
1	left forward
2	right forward
3	right reverse
4	left reverse



	colour	function
1	--	---
2	black	+Track Sw
3	red brown	COMMON
4	orange	+4 V
5	yellow	Play Sw
6	green	Motor
7	blue	Mute SW
8	--	---
9	--	---
10	--	---
11	--	---

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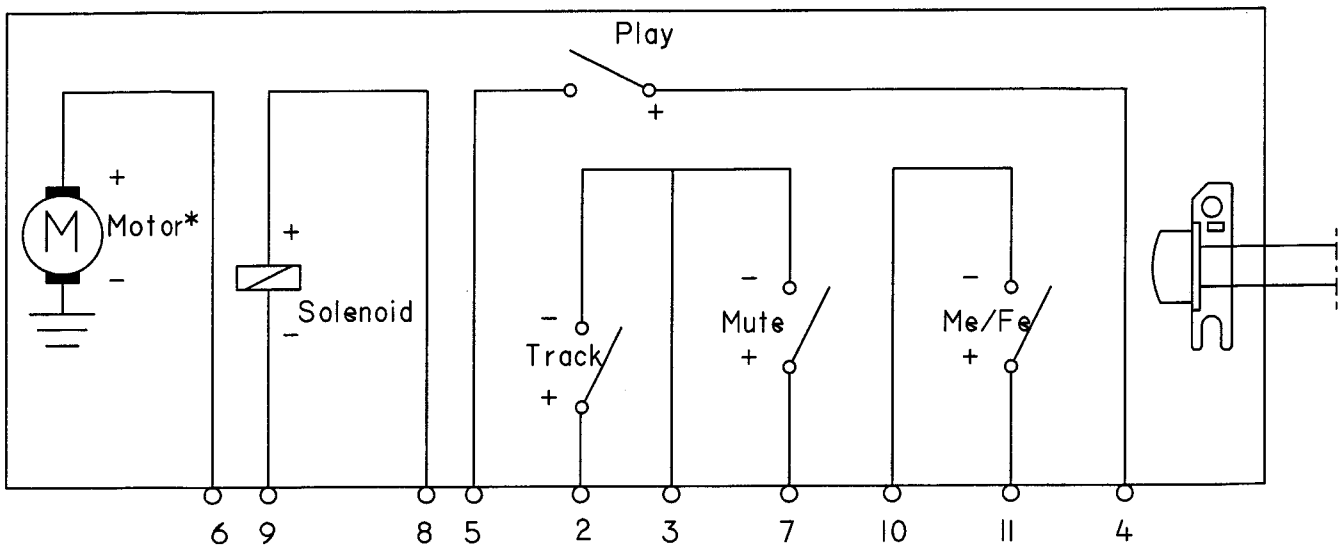
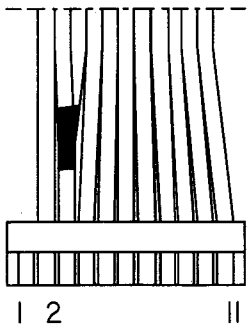
LCA 5.4 CONNECTOR AND SWITCH OVERVIEW

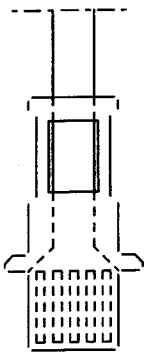


*Remark: Motor – internally connected to chassis!

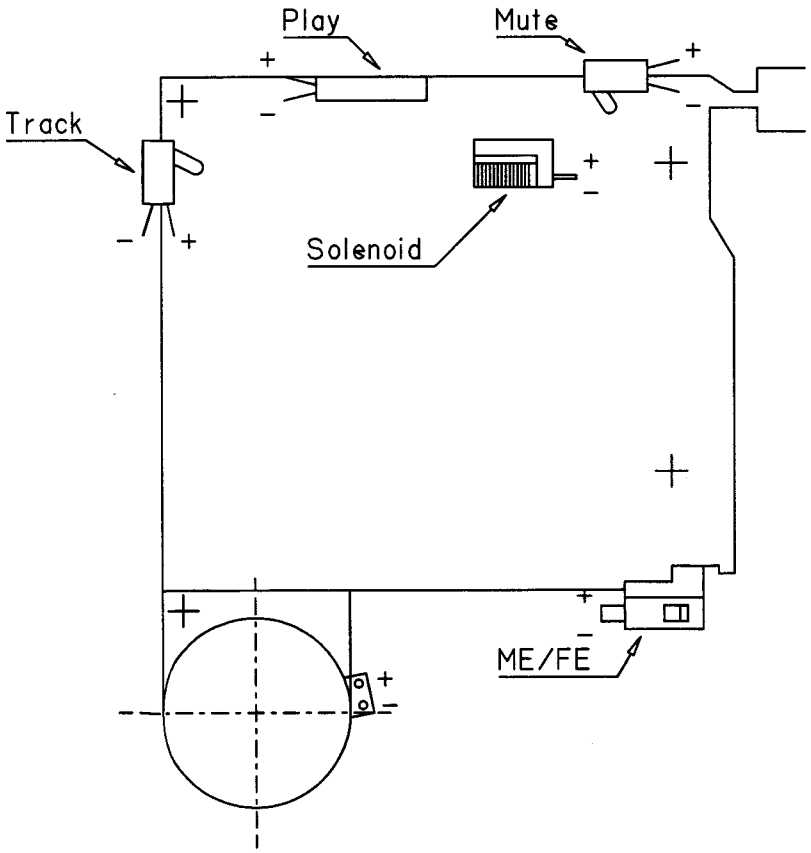


← round conductor flat cable

← connector



COM	common
1	left forward
2	right forward
3	right reverse
4	left reverse



	colour	function
1	--	---
2	black	+Track Sw
3	red brown	COMMON
4	orange	+14V
5	yellow	Play Sw
6	green	Motor
7	blue	Mute SW
8	violet	+ Solenoid
9	grey	- Solenoid
10	white	- Me/Fe
11	black	+ Me/Fe

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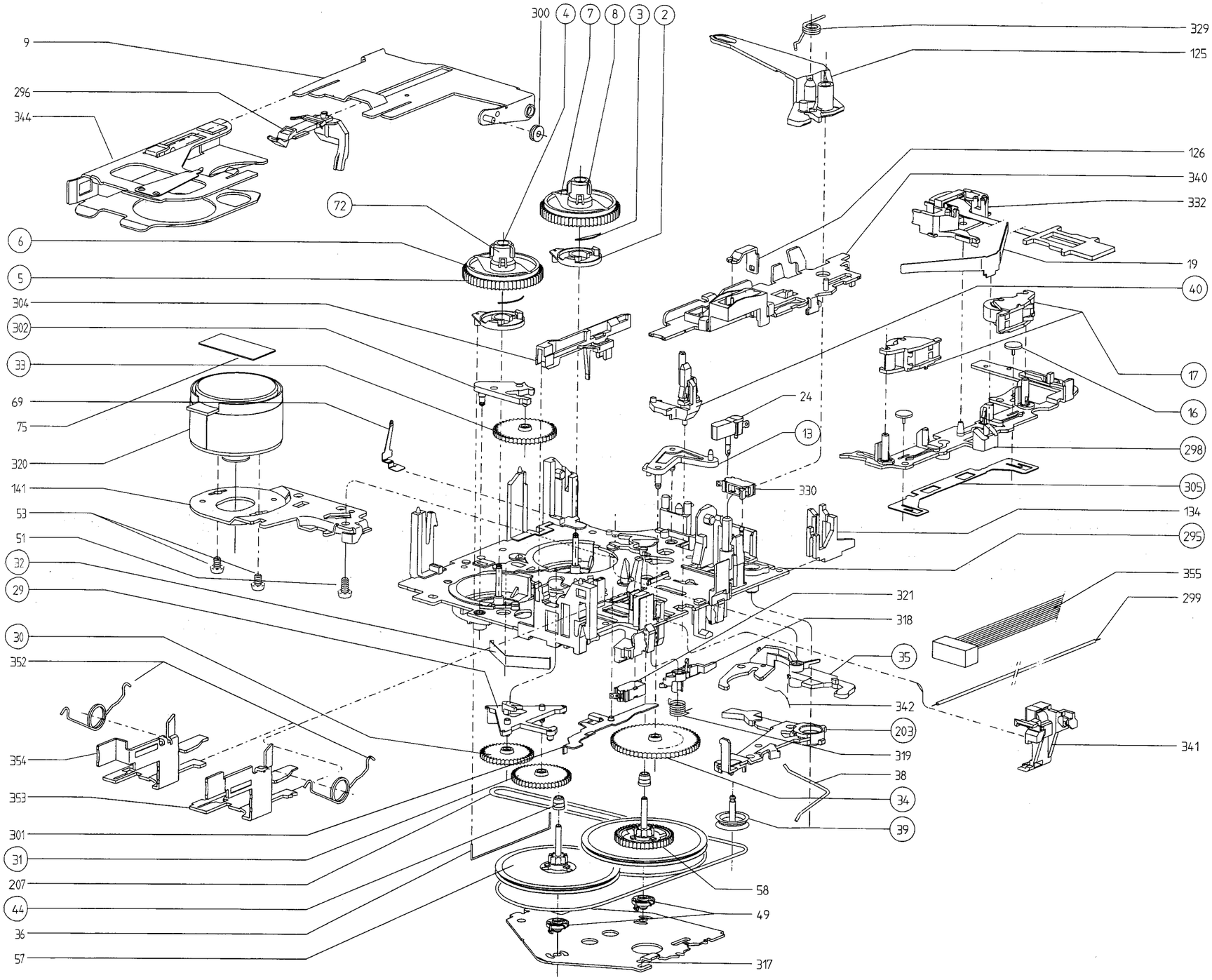
LCA 5.2 EXPLODED VIEW



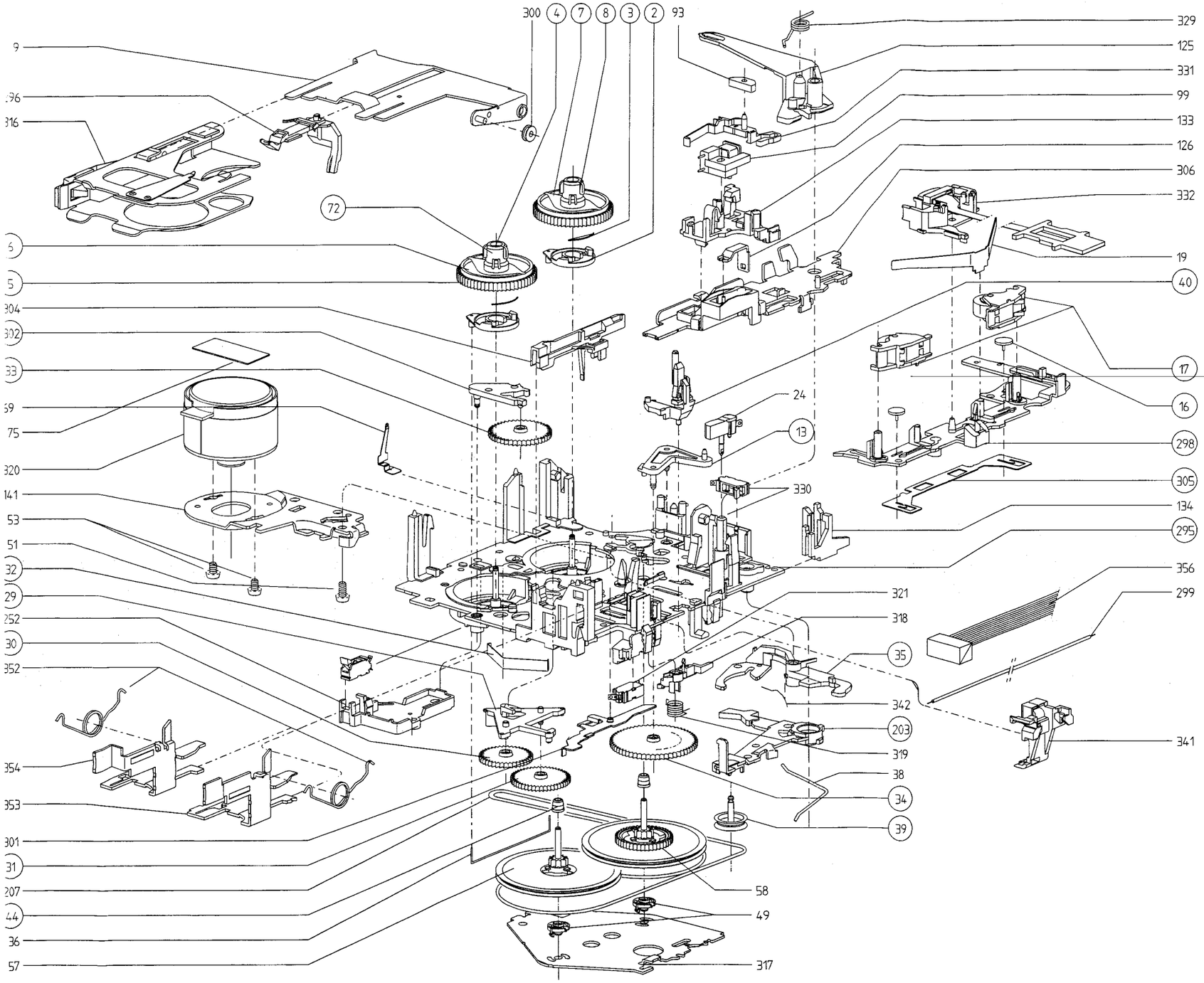
PARTS LIST LCA5.2

2/3	4822 466 70527	Disc assy
4/5/6/7/8	4822 466 70526	Coupling felt assy white
4/5/6/7/72	4822 528 10898	Coupling felt assy black
9	4822 466 81479	Cassette lift
16	4822 528 80983	Fixation
17	4822 403 40157	Pressure roller assy
24	4822 276 13081	Play switch
29/30/31	4822 522 20327	Gear assy
32	4822 492 71468	Leaf spring
35	4822 403 52031	Gear arm
36	4822 492 90076	Lever
39	4822 528 81144	Pulley
40	4822 403 10225	Holder
44	4822 520 30406	Bush bearing
49	4822 520 30407	Excentric
53	4822 502 12548	Special screw
57	4822 528 80985	Flywheel assy
58	4822 528 81517	Flywheel assy
125	4822 403 71287	Lever eject
126	4822 403 71286	Lever blocking
203	4822 404 21169	Arm
207	4822 358 31136	Driving belt
296	4822 256 92317	Holder cassette
298	4822 403 71282	Head support bracket
300	4822 528 10942	Lift roller
301	4822 466 10758	Plate logic
304	4822 462 30632	Band conductor
305	4822 466 10759	Control plate
318	4822 403 71284	Latch
319	4822 492 42774	Spring latch
320	4822 361 21764	Motor MSI-5 CCW
321	4822 276 13617	Switch mute
330	4822 276 13616	Switch track
332	4822 249 30227	Magnetic head
340	4822 402 10106	Push button rod
344	4822 256 10151	Cassette carrier ass/
	4822 691 10466	Deck LCA5.2 complete

Lubrication greases/oils

4822 390 10107	Isoflex PDP 65, 30ML
4822 390 10133	Grease 585K
4822 390 10134	Grease L30TF
4822 390 20116	Grease 004, 100G CAN
4822 390 20128	Isoflex TOPAS L 30

.CA 5.4 EXPLODED VIEW



PARTS LIST LCA5.4

2/3	4822 466 70527	Disc assy
4/5/6/7/8	4822 466 70526	Coupling felt assy white
4/5/6/7/72	4822 528 10898	Coupling felt assy black
9	4822 466 81479	Cassette lift
16	4822 528 80983	Fixation
17	4822 403 40157	Pressure roller assy
24	4822 276 13081	Play switch
29/30/31	4822 522 20327	Gear assy
32	4822 492 71468	Leaf spring
35	4822 403 52031	Gear arm
36	4822 492 90076	Lever
39	4822 528 81144	Pulley
40	4822 403 10225	Holder
44	4822 520 30406	Bush bearing
49	4822 520 30407	Excentric
53	4822 502 12548	Special screw
57	4822 528 80985	Flywheel assy
58	4822 528 81517	Flywheel assy
93	4822 281 60165	Anchor plate
99	4822 281 50113	Solenoid magnet
125	4822 403 71287	Lever eject
126	4822 403 71286	Lever blocking
133	4822 466 83076	Plate solenoid II
203	4822 404 21169	Arm
207	4822 358 31136	Driving belt
296	4822 256 92317	Holder cassette
298	4822 403 71282	Head support bracket
300	4822 528 10942	Lift roller
301	4822 466 10758	Plate logic
304	4822 462 30632	Band conductor
305	4822 466 10759	Control plate
306	4822 403 71283	Push button rod
318	4822 403 71284	Latch
319	4822 492 42774	Spring latch
320	4822 361 21764	Motor MSI-5 CCW
321	4822 276 13617	Switch mute
330	4822 276 13616	Switch track/ME-FE
331	4822 403 71285	Lever solenoid
332	4822 249 30227	Magnetic head
344	4822 256 10151	Cassette carrier assy
	4822 691 10467	Deck LCA5.4 complete

Lubrication greases/oils

4822 390 10107	Isoflex PDP 65, 30ML
4822 390 10133	Grease 585K
4822 390 10134	Grease L30TF
4822 390 20116	Grease 004, 100G CAN
4822 390 20128	Isoflex TOPAS L 30

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